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ORIGINAL ARTICLES.

ESCULAPIUS ON THE FIELD OF BATTLE.

Response to toast at the banquet of the Inter-State National Guard Association, held in Chicago, Dec. 14-15, 1898.

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CHICAGO.

Esculapius on the field of battle! What an inspiring sentiment at this time and on this occasion! Esculapius, the fabled deity of medicine, engaged on the battlefield in directing his faithful disciples in bringing comfort to the dying and timely and efficient aid to the wounded, is indeed an idea conveying the loftiest, noblest, soul-inspiring subject. The disciples of Esculapius have followed and served every army since man has resorted to contest by force of arms to secure the real or imaginary rights of tribes and nations. Every battlefield bears testimony of their life-saving, humanitarian work. When battles were fought hand-to-hand, and by the use of the most primitive weapons of war, the Esculapians were there with their pots of boiling oil with which to stanch bleeding, with their crude instruments with which to extract arrows buried in the flesh of the wounded warriors, and with their bottles of wine and oil with which to dress the wounds. Their practice has kept more than pace with the rapid and wonderful improvements in the implements of destruction employed on the battlefield.

It is a long time since civilized nations abandoned the catapult for the cannon, and the small-caliber, repeating breech-loader has taken the place of the bow and arrow, but the disciples of Esculapius have more than counterbalanced the increased horrors of war by the marvelous advancements made in the science and art of surgery. The battlefield has witnessed many changes in the practice of military surgeons. It was on the battlefield that Ambroise Paré substituted the ligature for the cautery in arresting hemorrhage. It was on the battlefield that Hans Ryf, Baron Larrey, Pirogoff, Guthrie, Nussbaum, Langenbeck, Esmarch, Stromeyer, Billroth, and a host of other worthy priests in the temple of Esculapius, achieved lasting fame.

Conservative surgery is the pride of the modern Esculapian on the field of battle. The stacks of amputated limbs that constituted such a gruesome and constant sight after every great battle during the Civil War, will never be seen again on the field of battle where modern surgery is practiced. Aseptic surgery has driven out of our military hospitals the four greatest enemies of the wounded soldier: hospital gangrene, secondary hemorrhage, pyemia and erysipelas. The probe, an instrument of torture, danger and fallacy, has been abandoned for the X-ray in locating bullets lodged in the body. The first-aid dressing properly applied at the right time constitutes, in the vast majority of cases, almost a sure protection against infection of the wound. Under aseptic precautions penetrating gunshot wounds of the large joints heal promptly, often without serious impairment of the function of the joint. Many cases of penetrating wounds of the chest and abdomen recover without operative interference. Prophylaxis has largely taken the place of operative surgery in the field. Our recent experience in Cuba and Porto Rico has demonstrated that the small-caliber rifle is a most humane weapon. If the wounded survive the immediate effects of the injury the prospects of recovery are good. Most of the wounds of the soft parts outside the three large cavities healed, with few exceptions, under one dressing in from ten days to three weeks. What a contrast with the experience of the surgeons during the Civil War only thirty-five years ago! This wonderful improvement in military surgery has been brought about through the labors of the disciples of Esculapius during the last thirty years.

Esculapius is unselfish and impartial in his work. His deeds of mercy are dispensed alike to friend and foe. He knows no creed, no politics. He is on the side of wrong as well as justice. He is loyal to every flag hoisted on the field of battle. He rejoices with the victorious, he sympathizes with the vanquished. He loves and respects the uniform of every nation. He is not anxious for war, but when war does come he is promptly on the field and remains there as long as a single soldier requires his services. He never sleeps. His thoughts, his actions, are devoted to the welfare and usefulness of the soldier. He is the adviser of the well, the comforter and physician of the sick and the good Samaritan of the wounded. His disciples have always proved worthy of their noble profession when engaged on the field of battle. They have served on every battlefield without any prospect or expectation of achieving undying fame, or even receiving the gratitude due them from those benefited by their services. Our histories of the world bristle with accounts of heroism and daring exploits of famous generals, but how little do we find of praise of the deeds of the disciples of Esculapius who faced all the dangers incident to warfare, besides doing battle daily with the Grim Reaper behind the fighting line.

The Esculapians on the field of battle belong to a noble, unselfish, learned profession. It requires years of hard study and a small fortune to acquire the necessary knowledge to prepare them for their work. They are men who in civil life would occupy a high social position and enjoy a handsome income from the practice of their profession. But the medical profession of all countries has always been intensely patriotic in times of war. The doctors always have been and always will be the salt of the population. Their education and training are of a nature to ensure qual-

ities necessary to citizenship of the highest type. The practice of their profession, even in times of peace, is admirably adapted to prepare them for the emergencies of war. In the exercise of their duties they encounter dangers and hardships foreign to the lives of the average citizens. They brave epidemics far worse than bullets, as far as danger to life is concerned, without fear of death. In cities devastated by the scourge of yellow fever or cholera, when everybody else that can leaves for a place of safety, the doctors remain at their posts and minister to the sick and dying without any expectation of a substantial reward, or even the gratitude of their impoverished clients. Day after day and night after night the familiar modest conveyance, with its lonely occupant, can be seen in the depopulated streets, wending its way to the hovels of the poor on its errand of mercy.

No military surgeon has ever attained the fame of the innumerable heroes who distinguished themselves on the battlefield and whose deeds have been immortalized in prose and poetry. In rank, pay and social position he has always been at a disadvantage as compared with the leaders of armies. His greatest reward always has been, and probably always will be, the consciousness of having performed his duty to his fellow-men. Will you not agree with me that the doctrines as taught by Esculapius and as practiced by his disciples are akin to the teachings of the Great Master? If you do not, let us follow for one day and one night the work of our Esculapian on the modern battlefield.

The disciple of Esculapius is on the field before the expected battle. He is a non-combatant and modestly takes his place behind the fighting line. He knows what is expected of him during the next day, and makes the necessary preparations. During the night the troops are rushed to the front and the line of battle is completed. A deadly silence attends these preliminary preparations for the next day's conflict. From the commanding general down to the private a sense of responsibility, uncertainty and suspense prevails. With the dawn of the new-born day the deadly conflict begins. The batteries furnish the prelude to the impending battle, followed by the irregular firing of the picket lines. The more regular cannonading on both sides and the volleys of musketry announce that the day's bloody work has begun in earnest. The uproar and tumult of battle has commenced. The line of battle is advancing slowly. Our Esculapian disciple is not idle for any length of time. He is near enough the fighting line to observe the movements of the troops, and within range of the fire. The singing, whizzing bullets do not disturb his calmness. Shells plow the ground around and about him, exploding with a dull but terrific noise and sending their messengers of death in all directions. He takes position in a sheltered place, where his patients will find protection from the fire of the enemy.

He is hardly ready for his day's work when the first victim arrives. He has been conveyed to the rear by friendly hands. A hasty examination shows that he has been shot through the thigh. The trousers on the injured side are soaked with blood. The garment is removed and a stream of red blood locates the bullet-wound. The patient's face presents a deadly pallor, his forehead is covered with a cold, clammy perspiration. The hands are cold and the pulse at the wrist is almost imperceptible. It is evident that the bullet has injured a large blood-vessel and that life is rapidly ebbing away from hemorrhage. The patient is conscious, but passive and listless. He does not realize his own danger. All he complains of is a torturing thirst and all he asks for is a drink of cold water. The experienced eye of the surgeon takes in the whole situation at a glance. He knows that prompt action is necessary to ward off impending death. In less time than is necessary to describe it, he applies an elastic constrictor above the wound which arrests the bleeding promptly, makes use of the first-aid package to protect the wound against infection, administers the necessary restoratives, pins the diagnosis tag to the lapel of the uniform, satisfies his thirst by administering the contents of his own canteen, and hands the patient over to the hospital-corps men, who bring him safely to the ambulance station.

Before he has disposed of his first charge his services are urgently demanded in his immediate vicinity, and he hastens to the new scene of catastrophe. A young soldier has been struck down by a fragment of a bursting shell which has almost completely severed both legs just below the knee-joint. The patient lies on the ground, motionless, with his sunken eyes directed stolidly toward the overhanging blue sky. He has lost but little blood, but his lips are pale and slightly livid, the nostrils dilated, the skin of the forehead thrown into deep folds. The hands are cold and the pulse at the wrist can not be felt. The respirations are irregular and sighing; a long and deep respiration is followed by a number of shallow, imperfect expansions of the chest. The mind is clear, but it takes repeated questions to elicit the simplest answer. The unearthly brilliancy of the otherwise expressionless, staring eyes clearly indicates the inevitable doom that awaits the wounded warrior. His life is but the flickering light of a tallow candle to be extinguished at any moment. The surgeon knows that in this case the terrible injury will result in death from shock. The patient is ignorant of the extent of the injury sustained, and if he should happen to see the cold, mangled, motionless legs, almost detached from the body, he would not realize that his life is in such immediate jeopardy. He makes no complaint and no requests. In an almost inaudible whisper he may ask for a drink of water. Home, relatives and friends have become to him but a pleasant dream. His mind is occupied by the experience of the day, his ears are filled with the din and tumult of battle, his eyes are still resting on yonder line of battle he was approaching but a few minutes ago with a firm hope of victory when he, with several comrades, was mowed down by the bursting shell.

The conscientious surgeon, recognizing the hopelessness of the case, feels that he has another mission to perform. He ascertains the name of the wounded and of the nearest relatives, and the address, and then calmly informs his patient of what awaits him. For a moment such information brings the patient's mind back to realities and, probably with a smile and look of gratitude, he responds calmly to the questions. He is made as comfortable as can be done under the circumstances, but before the setting of the sun his spirit has left the mutilated body and joined the peaceful army beyond the reach of human warfare. The next mail carries with it a letter from the surgeon, in which he details the date and cause of death of the gallant dead to his distant relatives. What such letters from the battlefield, conveying the last message of the dying soldier, mean to the relatives,

can only be fully realized by those who have received them.

As the heat of battle rises the number of wounded increases rapidly. At the first dressing station they are lying, sitting, standing, walking, awaiting the first dressing. Our Esculapian is unmindful of the heat, thirst and hunger, and hastens from soldier to soldier to extend to as many as possible, and in the shortest space of time, the blessings of the modern first-aid dressing.

With the approaching twilight firing gradually ceases, without any definite decision of the fortunes of war on either side. On both sides the soldiers rest on their arms, and under the cover of darkness satisfy hunger and thirst. Tired to death from the day's conflict, sleep overtakes them and the naked earth is coveted as a luxurious couch. The work of the combatants has ceased for the day; that of the non-combatants now begins in earnest. Many of the wounded still remain on the ground, bleeding and suffering from pain and thirst. The veil of darkness is penetrated in all directions in search of them. The faint voices here and there serve a useful purpose in locating them. The dead remain where death reached them. Many a litter-bearer's steps are made uncertain by stumbling over the corpses which cover the field. The crowd of wounded behind the fighting line, at the ambulance station and in the field hospitals grows larger and larger, and the cries for surgical aid become louder and more and more imploring. Can the surgeon who has worked incessantly all day quiet his conscience and satisfy nature's demand for rest, follow the example of his combatant comrades, throw himself on the ground and seek repose by surrendering himself to the greatest of all charmers—sleep? No! As long as his brain will do its duty and as long as a single muscle will respond to his determined will power, he will serve the wounded.

There are cases in which a prompt primary operation will save life. These are the cases who receive his first attention. An operating-table is extemporized, assistants are pressed into service, and with the aid of a candle light the most difficult operations are performed in the silence of the night, broken only by the frequent moanings of the numerous wounded waiting their turn for the operating tent, mingled from time to time with the shrieks of those who have become raving maniacs, and the stertorous breathing of the dying. What an awful night for our poor Esculapian who forgets his own wants and strains every nerve to serve his fellow-men, and to do credit to his profession and the country and flag that he calls his own. Throughout the whole night he works faithfully and incessantly, and with the break of day he finds his task still unfinished, and the prospects stare him in the face of a repetition of the previous day's experience. The day work was hard and trying; the night work reached the limits of human endurance.

Can you give me a more striking example of genuine patriotism and heroism than the twenty-four hours' work performed by our disciple of Esculapius on the field of battle? If you can not, I can. It is the same Esculapian away from the bloody field in the fever camp. It requires courage to face the enemy on the field of battle. It requires courage to stand up in a rain of bullets and in an atmosphere torn asunder every few moments by shot and shell, but it requires more courage to enter the silent fever camp, with its myriads of invisible foes. The song of the bullet is sweet music compared with the silent, invisible microbes that cause yellow fever, typhoid fever, malaria, dysentery and camp diarrhea.

It is a privilege to die a glorious death on the battlefield; no such halo of glory surrounds the death-bed in the fever hospital. It is here that the greatest deeds of heroism are witnessed. It is here where the true manly courage of our Esculapian hero is put to the severest tests. Let me ask you a plain, simple question to test the correctness of the assertions I have made, a question the significance of which, I fear, is not fully understood: If left to choose for yourself, would you not be more willing to engage in a battle than to live and work in a camp filled with typhoid or yellow fever patients? It would take me or any other disciple of Esculapius not long to decide in favor of the battlefield.

During the war just ended, the disciples of Esculapius have taken an important and noble part. Cowardice is unknown in our medical department. Our surgeons have done their duty promptly and well. Esculapius has watched their conduct and their acts. On more than one occasion he shook his massive hoary head in disapproval, not because of what they did, but of what they could not do.

Esculapius has drawn his own conclusions from the lessons of the war, and now suggests to you and to the people of the United States and their representatives in Congress the absolute necessity of a complete reorganization of the Medical Department. He insists that the rank of our Surgeon-General should be that of a Major-General, that he should be clothed with more executive power, and that he should have his own commissary and quartermaster's departments. He is satisfied if these important changes in the organization of the Medical Department are made, that there will be less suffering and deaths from disease should we again be called upon to cross swords with another nation.

In conclusion, permit me to ask you to listen to the voice of Esculapius in your efforts to effect a thorough reorganization of the National Guard. The new National Guard is destined to become the bulwark of the fighting force of our country, which will never imitate, much less adopt, the militarism of the tottering monarchies of the old world.

THE SECRETS OF HOSPITAL PATIENTS.

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Is the surgeon or physician bound to preserve the secrets of his patients in hospital, as he does of those in private practice? If so, how can he give clinical instruction over them? Then again, other queries arise. If clinical interests can invade the privacy of a patient's condition and divulge his secrets before the class, how about other interests? Have patients in public hospitals no rights to privacy of any kind? For instance, a patient has entered the hospital for an injury in a railway accident, and may have claims on the road for damages. The attorney of the road asks for a statement of the injuries, without bringing any permission from the patient. In a similar way the agent of an accident insurance company wants information, and often boldly claims that the surgeon is not bound to secrecy as to anything happening in a public hospital. Finnally, newspaper reporters

make the same plea, and curious neighbors and friends want to know all the particulars.

The principles which should guide us in these cases are simple, and both attorneys and eminent judges have have assured me that my understanding of the moral and legal points involved is correct. As to the clinics, the mere statement that a patient is in a public hospital considered alone does not settle the question about the obligation of secrecy; but there are two or three other things to be considered. The fully-developed modern hospital is not merely a place where the sick are treated. It consists of three things which mutually support each other; it is a school of clinical medicine for the education of young physicians; a school for training and instructing nurses, and a place of shelter and treatment of the sick. Now consider how these three departments support each other. The clinical school receives large numbers of students, who pay fees to the hospital for the privilege of attending the clinics, thus helping to pay the expenses. In order to obtain the best medical attendance for the poor, the physicians must either be paid high salaries or have some other adequate inducement laid before them to do the hospital work. Nearly every civil hospital, both here or in Europe, is served by the staff mainly for those indirect inducements. They have either a very small nominal salary or none at all. The real motive is that by the hospital appointment they become clinical instructors to medical students from adjacent medical colleges, often receiving a salary from the college. This appointment is an honor and gives them a high standing in their profession, thus drawing them many private patients who pay them good fees. The training-school for nurses is attended by selected pupils, who pay for their training and teaching by nursing the sick in the hospital. Thus the clinical school, the training-school for nurses and the hospital proper are all inseparably bound together, working for combined ends. In this way only can the charity work for the poor be kept up by hospitals not supported by taxation, since the small weekly dues paid by part of the ward patients do not cover their expenses. The clinical and training classes are necessary to the life of the institution, and the hospital publicly announces these accessories as part of its work.

Such being the case, prominent legal gentlemen inform me that patients entering the institution and receiving the benefits are morally and legally bound to submit to its regulations. As clinical lectures are an important and well-known part of the work of the combined institution, the patient on entering is necessarily and properly assumed to waive all claim to privacy so far as the purposes of clinical instruction and hospital administration are concerned, but not for any other purposes. In short, the patient waives the secrecy so far as the hospital plans and regulations require, but not for any outside purposes whatever. For instance, as I stated above, a patient in a hospital may have a claim, or perhaps a suit against a railway company for injuries received on its line. The hospital or its officers can not furnish to the railway company, or to any outside parties, any information about the injuries without the patient's consent. A patient may have syphilis, and the disease may be shown and fully explained to the clinical class, but it can not be divulged to his inquiring neighbors and friends, unless he desires it, which he probably does not. An agent of an accident insurance company often inquires about the condition of an injured patron, but it is not proper to inform him, unless the patient wishes it, and so of all other cases. The personal honor and the legal obligation of the surgeon are pledged to preserve the patient's secrets, except where necessarily waived for hospital purposes.

Can a surgeon reveal the secrets of his patients in a medical book or journal? Decidedly not without their consent, since such a publication would hardly be a truly clinical and hospital affair. However there is no real difficulty here. The scientific points of a patient's case can be stated without revealing the name, residence or in any other way disclosing his identity. As a matter of fact, most patients are very proud and happy to see their cases printed in a scientific document.

If a court demands testimony from the hospital physician or surgeon there is nothing peculiar in hospital cases. The court can compel one to testify of matters in hospital or out of it, except in those States which have laws protecting the privacy of communications from patients to their physicians.

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GALL-STONES IN COMMON DUCT.

A REPORT OF TWO CASES.

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The following cases of gall-stones in the common duct demonstrate so clearly the ball-valve action of floating stones, which has been so ably studied and described by Fenger,[1] that they are deemed worthy of being put on record:

Case 1.—C. P., aged 48 years, a native of New York, was admitted to Providence Hospital Sept. 13, 1897. He gave a history of having had a slight attack of colic as early as 1888, which recurred in 1890. These were followed by occasional mild attacks, and in 1896 he had a long siege with fever in California, which was thought to have been of malarial origin. During this illness he suffered from several severe attacks of colic, each of a few hours' duration. When admitted to the hospital he had been having chills followed by fever and sweats, occurring every two or three days, and his case was entered as malarial fever. There was no icterus, and no history of an attack of colic for several months. After being in the hospital a few days he developed a very pronounced jaundice, his stools became of a light-gray color and the urine was scanty and of a very dark-brown color, showing a sudden and complete obstruction of the common duct. The rigors continued, with an after-rise in his temperature, frequently to 103 and 103.5. It was now thought that his symptoms were produced by an impacted gall-stone in the ductus choledochus, and an operation was decided upon, which was performed September 28. The abdomen was opened by an incision commencing at the right border of the rectus muscle, at the level of the tip of the tenth rib, and extending obliquely downward and outward for about 12 cm. The gall bladder came easily into the field of vision. It was moderately distended with bile, and two or three calculi could be readily felt through its walls. The common duct was dilated and its walls much thickened. A stone apparently about 1 cm. in diameter was discovered in it about 3 cm. above the junction with the duodenum. This was quite easily moved in the duct, and while trying to get it into a suitable location for incising the duct upon it for its removal, the stone slipped from between the fingers and could not be relocated, although a diligent search was made, both down behind the duodenum and up the hepatic duct to the liver. The question now arose as to the advisability of opening the duct and making further search with a probe for the lost stone, but owing to the possibility that the stone might have been crushed between the thumb and fingers and the resulting débris thus passed through into the intestine, it was decided that it would be best to wait for further symptoms before incising the duct. This action was approved by Dr. Fenger in a personal communication, when the circumstances of the case were related to him.

[1] American Journal of Medical Sciences, 1896.

The gall-bladder was now opened, two medium-sized stones were removed, and an unsuccessful attempt was made to pass a probe through the cystic into the common duct. The edges of the gall-bladder were then stitched to the peritoneum and a rubber drainage-tube introduced. The rest of the wound was closed. The drainage-tube, which was of large size and 15 cm. long, was brought out through the dressings, and a 150 c.c. bottle was attached to its end so as to catch the bile as it was discharged. The contents of the stomach showed a decided presence of bile during the vomiting following the anesthesia. This was positive proof that the obstruction in the common duct had been overcome. The recovery was uneventful. From 350 to 400 c.c. of bile was passed into the bottle through the drainage-tube every day. This proved to be an excellent plan, as the dressings were thus kept perfectly dry, and the quantity of bile which escaped could be accurately measured. The rigors ceased, and there was but a slight rise of temperature following the operation. After a few days the stools began to resume their normal color and the icterus slowly faded. The amount of bile passed through the drainage gradually diminished and the tube was removed on the twelfth day. His appetite improved and he gained strength rapidly.

After about eight weeks the stools became clay-colored again, and the icterus reappeared, indicating that the obstruction in the common duct had recurred. It was now feared that our conclusion regarding the disappearance of the stone in the duct during the operation was erroneous, and that instead of having been crushed, it must have slipped up the hepatic duct out of each of the fingers, and that it had now returned to the ductus choledochus and was causing the obstruction. The symptoms becoming more pronounced, another operation was decided upon, which was performed December 14. The incision was made about 2 cm. to the left of the scar of the first operation, in order to avoid the biliary fistula, which had never entirely closed. Much difficulty was experienced in reaching the common duct on account of the very firm and extensive adhesions resulting from the former operation. The stone was discovered in the duct about 5 cm. above its duodenal end. The wall of the duct was incised over the stone, which was scooped out and proved to be two stones, one acorn-shaped, being 1.5 cm. long and 1 cm. in diameter, and accurately coaptated to the smaller by facets, the latter being a button-shaped stone, 1 cm. in diameter. The ductus choledochus was examined both above and below the incision by finger and probe, the latter passing readily into the bowel, but no more stones could be found. The opening in the duct was closed by two rows of fine silk interrupted sutures, but with much difficulty, owing to the working space being so much limited by adhesions. A gauze drain was placed down to the duct, and the rest of the wound closed by silkworm gut sutures. There was no leakage of bile from the incision in the duct, so the drain was removed on the third day and the wound united without suppuration.

The biliary fistula was also closed at the same time, but this unfortunately reopened at the end of ten days. His recovery was uneventful in other respects, and when last seen, five months after the operation, he had gained over thirty pounds in weight. His appetite was good, skin clear, and stools normal. The fistula, however, still gave him a great deal of trouble, as it would close for two or three days and then break open again. I wanted to make an anastomosis between the gall-bladder and the intestine, in order to relieve all internal pressure from the gall-bladder, and thus endeavor to assist in a successful operation for closing the fistula, but he left the hospital before this could be accomplished.

Case 2.—This case was referred to me by the kindness of Dr. H. F. Titus. Mrs. J. F., aged 45 years. Family history was negative. She had never suffered from pelvic derangements of any kind and was still menstruating regularly. Prior to 1884 she had always been perfectly well. At that time she began to have indigestion and had occasional attacks of what she called "bilious colic," which consisted of pains in the stomach, accompanied by nausea and sometimes vomiting, and in the course of a few hours she would feel as well as ever. These attacks seemed to have no apparent effect on her general health, but they gradually became more frequent and severe. In August, 1896, she had one much more violent than usual, lasting for several days, and followed by jaundice. Up to this time she had been quite fleshy, her usual weight being from 160 to 170 pounds, but after this she began to lose flesh. During the next year the attacks came on about the same as before, but the jaundice never entirely disappeared, there being a well-marked exacerbation of the icterus following each attack of the colic. Early in August, 1897, she began to have chills, followed by fever and sometimes profuse sweating. She was sent from her home in northern Missouri to consult a member of the faculty of one of the medical colleges in St. Louis, who informed her that she had an hepatic tumor of some kind, probably malignant, and advised her to come to the Pacific Coast, in order that the change of climate might have some beneficial effects.

I saw her, in consultation with three other physicians, Oct. 5, 1897. At this time the skin was a bright lemon color, and wrinkled from her emaciation, having lost about forty pounds from her former weight. The urine was scant and of a dark brown color, and gave a decided bile reaction. The stools were semi-solid and of a light slate color. Her appetite was very poor. She had had no attacks of colic for several months, and no tumor could be felt in the region of the gall-bladder, although the liver appeared to be slightly enlarged. Firm pressure over the gall-bladder revealed but little tenderness. She was having a well-marked rigor every second or third day, which was followed by a temperature ranging from 102 to 103.5. The diagnosis arrived at was that of a stone impacted in the common duct. An operation for its removal was advised at this time. A few days later her physician had her removed to Providence Hospital and put her on large doses of phosphate of sodium and other similar preparations, with a view of dissolving the stone. Thinking that there might also be an element of malaria in the case, from the frequent chills, large doses of quinin were exhibited for a time, but without beneficial effects. After complete rest in bed for a few weeks, she improved in color, and the character of the stools showed that some bile was passing the obstruction. She returned to her home, but as soon as she left her bed the jaundice began to increase and the stools to lose their color again. A return to bed improved the symptoms again. This was repeated two or three times, showing that the obstruction in the duct was much less in the recumbent position than when the patient was up around the house. This to my mind, even in the absence of pain, was conclusive evidence of the presence of a floating choledochus stone with ball-valve action.

An operation was finally consented to and she re-entered the hospital, where I operated on her Dec. 21, 1897, being assisted by Drs. Sharples, Dawson and Ford. Dr. Titus was also present. The abdomen was opened by an incision commencing at the right border of the rectus muscle, at the level of the tip of the tenth rib, and extending obliquely downward and outward for about 12 cm. The liver was slightly enlarged, but otherwise apparently normal. The gall-bladder contained about 15 c.c. of bile, but on careful palpation no stone could be felt through its walls. The cystic and common ducts were now carefully examined and a stone about the size of a hazel nut was located in the common duct just above its entrance into the duodenum. After loosening some adhesions, my fingers were passed behind the stone in the duct and thus held firmly while an incision was made into the duct over the stone. In doing this, the stone was crushed between the thumb and fingers. The débris was scooped out with a small spoon curette. The tip of the little finger could then be easily passed into the duct both above and below the opening, but no other stones could be found. A small quantity of bile escaped from the wound in the duct, which was caught on a gauze sponge. An ordinary sized uterine sound was passed through the duct into the bowel. The incision in the duct was closed by a double row of fine silk interrupted sutures, and was followed by no leakage of bile. A gauze drain was passed down to the ductus choledochus, and the abdominal wound was closed by silkworm gut sutures, the one at exit of drain being left untied. The gauze drain was removed on the second day, and a much smaller one inserted, which was removed on the fourth day after the operation, and the loose silkworm gut suture tied.

Her recovery was rapid and uncomplicated, except for the occurrence of two small stitch abscesses, which closed very promptly after evacuation of their contents. The appetite improved at once and she gained strength quite rapidly. The icterus gradually faded, and the skin resumed its normal elasticity. At the present time—eight months after the operation—she has a very robust appearance, and has gained nearly forty pounds in weight. She has had no recurrence of the colicky pains, but has had a few slight attacks of indigestion from a little overtaxing of the powers of the stomach.

Diet for Hyperacidity.—Soerensen and Metzger announce that persons with gastric hyperacidity tolerate fats exceptionally well, and that a diet rich in easily melting fats is indicated, such as butter, oil, and especially milk and cream. They also mention that oatmeal broth vanishes from the stomach with remarkable rapidity even in cases of great motor insufficiency, with normal increased acidity.—*Rev. de Path. Int.*, December 5.

ESSENTIAL OILS AND OTHER AGENTS.

THEIR ANTISEPTIC VALUE; ALSO THEIR IRRITATING OR NON-IRRITATING PROPERTIES.

Presented to the Section on Stomatology at the Forty-ninth Annual Meeting of the American Medical Association, held at Denver, Colo., June 7-10, 1898.

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Very soon after assuming the duties of the chair of materia medica and therapeutics in college work, I became convinced that in our literature there was much loose statement concerning the action of the drugs we employ in dentistry. Especially did this seem true in regard to the antiseptic powers of the various agents employed as antiseptics. Further, the therapeutic action of these agents has generally not been especially considered. It seems that iodoform is still used by many as an antiseptic, though it has long been known that it has not that power. It is also known that the presence of albumin renders the ordinary solution of bichlorid of mercury inert as to antiseptic power, and prevents the effectiveness of that agent in treating suppurative surfaces, yet it is persistently used for this purpose. The essential oils, some of which have previously been shown to possess antiseptic virtues, have seemed to be looked upon as a group of antiseptics, and, as it has seemed to me, are being used without reference to their relative merits as antiseptics, or to their therapeutic effects upon the tissues to which they are applied. For these reasons I have, in my teaching in the Northwestern University Dental School, made trial of these agents in the bacteriologic laboratory, concerning their effectiveness as antiseptics, and have also, in various ways, proved their effects upon the animal tissues in order that I might speak definitely of my own knowledge of these matters. In this paper I will give briefly my observations upon a number of these agents.

To determine the antiseptic value of these agents the following experiments were conducted: Test-tubes, each containing ten cubic centimeters of sterilized mutton bouillon (which amount will hereafter be referred to as the *unit of culture media*), were used. The broth in these tubes was, for the most part, infected with saliva from various members of the class. In each set of plants made a control-tube was used i.e., a tube in which the broth was infected with saliva, but into which no antiseptic agent was placed, simply to act as a control for the results of the remaining tubes into which antiseptic agents were placed. In each instance the control-tube presented a full development of bacteria, thus proving the accuracy of each set of plants. One drop of the essential oil was first used in the tubes, and when it prevented development of bacteria, the quantity was gradually decreased in other plants, until the least amount that would prevent development was ascertained. To divide the drop I placed ten drops of alcohol in a small vial, and into this placed one drop of the oil; the alcohol disolves the oil immediately. I then used in the culture-tube such proportion of the drop of essential oil desired—one drop of the solution representing one-tenth drop of the oil. Those drugs that were found ineffective with one drop were increased in other plants until found effective, or were given up as unsuitable or worthless as antiseptics. The same dropper was used throughout. When using the same dropper it will be observed that a drop of alcohol is smaller in bulk than a drop of essential oil. Because of this difference in the size of the drops, ten drops of alcohol and one drop of an essential oil forms as nearly as can be figured a 10 per cent. solution, and one drop of this solution represents one-tenth of a drop of the oil.

An antiseptic must be regarded as a poison to the vegetable cell, and many of them act also as poisons to the animal cell. I undertook this series of experiments for the determination of these differences of poisonous effects with the idea that in selecting antiseptics for use in practice we should have special regard to the effect of the agents upon the animal tissue to which they are applied. To determine the irritating or non-irritating proportion of these oils, an extensive course of experiments with them has been conducted during the winter months, in connection with sores artificially produced on guinea-pigs, and also on my own person. To determine the effect of these agents when applied directly to soft tissue, the applications were made, in each instance, to my own person. And pardon me for saying that I have come to positive conclusions regarding some of the agents along these lines.

Oil of Cassia.—We find that three-tenths of a drop is the smallest quantity that will prevent the development of bacteria in the *unit of culture media*, and there being sixty-seven drops of oil of cassia in one cubic centimeter, this agent is effective as an antiseptic in 1 to 2233 parts; that is to say, one whole drop of oil of cassia would prevent development of bacteria in 2233 drops of infected broth. This explanation will hold good in connection with each agent we have used. Oil of cassia is undoubtedly the most potent of the essential oils as an antiseptic. I have analyzed at least a dozen samples of cassia, obtained from as many different sources, and have found them to be adulterated in each instance. One sample, especially, shipped direct from China to a dealer in Chicago, was found to contain fixed oils in considerable quantity. Others were found to contain alcohol, etc. This oil, as found in commerce to-day, is not as potent an antiseptic by about one-half as was the cassia obtained ten years ago. A reference to the work done by Dr. G. V. Black about ten years ago, along this same line, serves to prove the correctness of this statement. The samples of cassia he used at that time were potent in 1 to 4000 parts. If I could have obtained a pure, unadulterated sample of cassia, it would have certainly outclassed oil of cinnamon as an antiseptic, by a wide margin, but as it is, as to the division of a drop, they have proven exactly the same. However, you will notice when we consider that agent, that of the oil of cinnamon only sixty-three drops are required for one cubic centimeter, while of cassia sixty-seven drops are required. This simply means that one drop of the oil of cinnamon is just slightly larger in bulk than one drop of the oil of cassia, so that this discrimination in the number of drops to the centimeter, still places the oil of cassia ahead of the oil of cinnamon as an antiseptic, the potency of oil of cinnamon figuring out 1 to 2100 parts. While oil of cassia stands at the head of the essential oils as an antiseptic, it is also true that it is the most poisonous in its effects upon soft tissue. As a test of its irritating properties a pellet of cotton was saturated with it and placed in a small rubber cup, to prevent evaporation. This was applied to the surface of the skin and held there by means of a piece of court-plaster

large enough to cover it and stick tightly to the surface of the skin about the edges. This was retained in place for twenty-four hours, during which time the irritation to the soft parts was by no means pleasant. At the end of this period a blister invariably formed; the inflammation in the tissues at this time is not very great. The blister occupied an area from one-half to one-third greater than that to which the oil is directly applied, and filled and refilled with serum several times before any tendency to recovery was noticed. At the end of forty-eight hours the inflammation in the parts involved was intense, and occupied an area four or five times as great as that to which the oil was directly applied. Numerous small independent blisters almost invariably formed about the circumference of the inflamed area. This condition continued for several days, and while the inflammatory process was at its height the sore was one of the ugliest and most formidable in appearance it has ever been my privilege to look upon. These sores were also very slow in healing, for it was with seeming regret on their part that the inflammation was permitted to subside, and the parts to return to a normal condition. While these sores are in every way just as bad as has been described, they are, however, fraught with no serious consequences.

To further test the irritating properties of this oil, a sore, in connection with which there was considerable inflammation, was produced on a guinea-pig and treated for a number of days with the spray, by means of an atomizer. So long as this treatment was continued the parts could not recover, the inflammation was greatly increased. Suppuration was then produced by infecting the sore with pus microbes. This in turn was treated with the spray, with the result that the germs were destroyed and the pus formation stopped, thus proving conclusively that this agent is an excellent germicide, when applied to suppurating surfaces, as well as a most potent antiseptic.

To my mind, it is clearly proven that while the antiseptic and germicidal properties of this oil are of the highest order, it is one of the most irritating, in its effects on soft tissue, of all the agents with which we have anything to do. And because of these effects, as outlined above, I feel justified in making the statement that oil of cassia should never be used as a dressing in the root canals of teeth.

There is another reason above why it should not be used, and that is, its proneness to cause discoloration of the teeth. In almost every instance in which its use is continued for a time the teeth are more or less discolored, and in some cases very considerably. This is one of the most difficult forms of discoloration to correct that we are called upon to treat.

Is it not reasonable to suppose that when cassia is used in the treatment of pulpless teeth, the above disagreeable conditions may occur in the soft tissues occupying the apical space, and the peridental membrane become involved in the inflammatory process? Have you ever thought that the excessive flow of serum which so frequently occurs from the tissues of the apical space of teeth that are being treated with this oil is nothing more or less than the discharge of actual blister as in the cases above cited? If these are reasonable suppositions, and I believe they are, is it still a source of wonder to you that teeth, under these circumstances, so suddenly develop such extreme tenderness to pressure, as they so frequently do?

Oil of cassia, however, has a place in our practice as dentists. Cassia water, sometimes, in the treatment of fistulous abscesses, is very useful. It is so stimulating to the tissues that it excites a healthy action on the part of the latter when other agents fail. Oil of cassia in the treatment of severe cases of pyorrhea, so-called, where the pockets about the teeth are deep, and considerable pus present, is exceedingly useful. In such cases it may be used in full strength by means of a drop-syringe. The oil is not permitted to remain in contact with the soft tissues a sufficient length of time to cause trouble, it is so soon diluted by the fluids of the mouth.

Oil of cinnamon of Ceylon.—We find that three-tenths of a drop prevents development of bacteria in the *unit of culture media*, and that sixty-three drops constitute one cubic centimeter, thus showing this agent effective as an antiseptic in 1 to 2100 parts. Oil of cinnamon of Ceylon is very much the same nature as oil of cassia. However, in some respects there is a marked difference between them. It has been demonstrated that oil of cinnamon is not so irritating to soft tissue as oil of cassia. An application to soft tissue, in the same manner that cassia was applied, and left for twenty-four hours, caused considerable irritation, and formation of blister. At the end of forty-eight hours the inflammation was severe; however, not so intense as that caused by cassia, and the area of tissue involved in the inflammatory process was not so great. Also, the blister that developed by the application of cinnamon was by no means so large as that from cassia, occupying the center of the inflamed area and spreading over tissue in extent equal only to that to which the agent was directly applied. The blister and inflammation were not so persistent as is the case with cassia, the former refilling with serum usually but two or three times, and the inflammation passing away quite readily.

A sore on a guinea-pig, attended with much inflammation, was treated with the spray of oil of cinnamon with the result that it was further constantly irritated and thus prevented from healing. Suppuration was then produced in the sore, and again treated with the spray of this oil, the germs being destroyed and the pus formation ceasing. The action of cinnamon was not so vigorous as that of cassia. To my mind, cinnamon is altogether too irritating for use in the treatment of pulpless teeth.

A synthetic oil of cinnamon.—A sample which I secured this spring from the first lot sent to this country (it being prepared in both France and Switzerland) proved to be as potent an antiseptic as the regular oil, three-tenths of a drop preventing development of bacteria in the *unit of culture media*. Sixty-four drops of this oil constitute a cubic centimeter, thus showing it effective as an antiseptic in 1 to 2133 parts. It is, however, in its first effects, more irritating to soft tissue than the oil of cassia. An application was made to soft tissue, and at the end of fifteen hours a fully developed blister, in extent larger than the area of tissue to which the oil was applied, resulted. There was very little inflammation or discoloration of the tissues. The first effect of this oil on the soft tissue was so vigorous, very much tenderness and inflammation were confidently expected to follow. In this, however, I was disappointed. The blister continued to refill with serum several times, but no tenderness or inflammation worthy of mention developed in the surrounding parts. I can not recommend it for use in the treatment of pulpless teeth.

Beech-wood creosote.—This is the next agent, from point of potency, as an antiseptic; five-tenths of a drop prevented development of bacteria in the *unit of culture media.* There are sixty-four drops in one cubic centimeter, thus showing creosote effective as an antiseptic in 1 to 1280 parts. This agent is non-irritating to soft tissue. An application remaining for a period of thirty-six hours produced no irritation. The surface of the skin was slightly discolored and also slightly burned or seared over, but not to an extent that caused the loss of any tissue. A sore on a guinea-pig was treated with the spray with the result that the inflammation gradually subsided, and the sore healed rapidly.

Another sore in which suppuration was produced was treated in like manner, the germs being readily destroyed and the pus formation stopped. Continued treatment resulted in the gradual healing of the sore. Creosote has proven its right to stand among the first, from point of potency, as an antiseptic, and because it has been demonstrated that it is practically non-irritating to soft tissue, it is a safe agent, and in some cases a very desirable one for use in the treatment of pulpless teeth. In case of putrescent pulp, for instance, of long standing, one in which the lateral openings and also the dentinal tubuli are completely saturated with mephitic odors and gases, creosote, in my judgment, is the most effective and desirable of the available agents. It is very penetrating and one of the most persistent in its effects of all the agents at our command. I have used it to good advantage in severe cases of apical pericementitis. However, in some instances, where discoloration of the teeth has occurred, it has seemed that it was due to the action of the drug. Creosote being more or less of the nature of carbolic acid, possesses to a certain extent the properties of a local anesthetic, and because of this property it has a rather beneficial effect upon inflamed tissue.

Oil of cloves.—Six-tenths of a drop prevented growth in the *unit of culture media*; sixty-nine drops constitute one cubic centimeter, showing it effective as an antiseptic in 1 to 1150 parts. Oil of cloves is absolutely non-irritating to soft tissue. An application to the surface of the skin for thirty-six hours left no more evidence of having been confined there than so much sterilized water would have done. No irritation, no discoloration. Sores were produced on guinea-pigs and treated with the spray of oil of cloves. The inflammation subsided more rapidly than when treated with any other agent, and the sores healed as rapidly as they could. A sore in which suppuration was produced by being infected with pus microbes was treated with the spray of this oil; the germs were destroyed, and the formation of pus was stopped, simply proving beyond any possibility of doubt that, while effectively destroying microbes, the only action of the oil in contact with irritated, inflamed soft tissue is that of a quieting, soothing agent, serving to reduce the irritation and inflammation, and returning the disturbed tissue to its normal condition.

A sore on my arm, produced by an application of cassia, became infected, and pus formed. This was washed thoroughly with a 1 to 1000 solution of bichlorid of mercury every night for several times, and dressed in turn with iodoform, nosophen and aristol, with no other result than an absolute failure to stop pus formation. One night, after having washed the sore thoroughly with the bichlorid solution, I poured oil of cloves into the raw tissue. There was only a very slight smarting for a few minutes, after which its action was that of a quieting, soothing agent. The application was held in position for twenty-four hours. It was then removed; no pus was present and the little granulations could be seen all over the surface of the sore. It was immediately dressed with aristol and let alone for forty-eight hours, at the end of which time it was perfectly healed.

Another sore on the lower part of my right leg, the result of an application of formalin, was causing a great deal of trouble. The inflammation was severe, the tissues very sore, the muscles felt bound up and were painful, it being exceedingly difficult to walk. Continued treatment with ordinary remedies resulted in no relief. One morning, after having thoroughly cleansed the sore, a liberal quantity of oil of cloves was placed on it and the bandage applied. Within four hours the very disagreeable, drawn condition of the muscle passed away, the pain ceased and the foot could be moved in all directions as freely and comfortably as could the other, and could be used just as well as ever.

Oil of cloves for general use in pulpless teeth, is certainly one of the best agents at our command. It possesses the property of destroying or rendering inert infectious material. In cases of apical pericementitis it is perhaps the best agent that can be used. It possesses local anesthetic properties to a marked degree, and like some of the other agents, because of this fact serves to reduce the inflammation in the tissues in the apical space and causes them to return to a normal, healthy condition.

Oil of bay.—Seven-tenths of a drop prevented development in the *unit of culture media.* Seventy-two drops are necessary for one cubic centimeter, showing this agent effective as an antiseptic in 1 to 1028 parts. Oil of bay, to me, is a comparatively new agent, and I believe I am warranted in making the statement that it is a new agent to a vast majority of the dental profession. A year ago last winter a gentleman spoke to me about oil of bay, said he had been using it for some time in the treatment of pulpless teeth, and that, so far as his clinical exerience went, had found it to be an agreeable and efficient agent. He stated that he had not observed any bad effects along the line of producing irritation, or any thing of that sort. He requested that I test it, which I did, with the result above stated, which places this oil in the foremost ranks of the list of antiseptics. I have used it more or less since, and in one case that I have in mind thought the irritation and tenderness which was induced was directly due to the action of the oil. But in subsequent use I have observed none of these bad effects. I came to the conclusion that I was wrong, that there must have been some foreign, irritating substance present which caused the trouble. I have made two applications of the oil to soft tissue, retaining each in contact for thirty-six hours, for the purpose of observing its effect, and no irritation resulted in either case.

A sore was produced on a guinea-pig with an irritant which caused intense inflammation. This was treated with the spray of bay for several days, and the closest observation did not reveal any additional irritation, but to the contrary, the inflammation gradually subsided. However, not so rapidly or willingly as when some other agents were used. A sore in which suppuration was produced, on being treated with the spray of bay yielded very nicely, the germs being

destroyed and the pus formation stopped. I think we are safe in concluding that oil of bay is a valuable addition to our list of agents for the treatment of pulpless teeth.

Oil of sassafras.—Seven-tenths of a drop prevented development of bacteria in the *unit of culture media*. Seventy drops are required for one cubic centimeter, showing it effective as an antiseptic in 1 to 1000 parts. Oil of sassafras in contact with soft tissue for thirty-six hours produced no evidence of irritation. It has proven to be a very potent antiseptic. I have treated sores in which there was marked inflammation, with the spray of sassafras, and the result was much the same as with the last previous agents; the inflammation subsiding, the irritation passing away and the sore healing. It has not exhibited the ability to destroy germs and prevent pus formation to nearly the extent that the stronger agents have. I have never used oil of sassafras in the treatment of pulpless teeth, but I certainly can see no reason why it should not be a potent and harmless agent in this connection.

Oil of peppermint.—Eight-tenths of a drop prevented development of bacteria in the *unit of culture media*; seventy-two drops are necessary for one cubic centimeter, showing this agent effective as an antiseptic in 1 to 875 parts. An application of oil of peppermint to soft tissue continued for thirty-six hours produced no irritation, no discoloration of the skin, no inflammation, thus showing conclusively that this, also, is non-irritating to soft tissue. A sore in which considerable inflammation was present was treated with the spray of this oil, with the result that the inflammation readily yielded, the irritation subsided and the sore healed. Another sore in which suppuration was produced was treated in the same way, with the result that the germs were destroyed and the pus formation stopped, which proves that this agent is not only an antiseptic, but also destroys the germs and thus prevents pus formation. This is an agent which I have rarely ever used in practice. Three years ago I used it a little in treatment cases, but discarded it simply because of its persistent, penetrating odor. Other than that, I can see no objection to its use in pulpless teeth.

Dr. Black's "1-2-3."—This is the next agent in point of potency. One and four-tenths drops prevented development in the *unit of culture media*; sixty-five drops are necessary for one cubic centimeter, showing this agent effective in 1 to 454 parts. "1-2-3," as you know, is a preparation given to the profession a number of years ago by Dr. G. V. Black, consisting—the mild solution, so-called, and this is the one used in these tests—of one part oil of cassia, two parts carbolic acid crystals and three parts gaultheria. It has always proven itself a most efficient agent in the treatment of pulpless teeth, and has been used by very many practitioners for the last ten or twelve years, possibly, more than any other agent. I have used it continuously since I have been in practice, and have never observed any bad effects from its use, no irritation of the soft parts, no tenderness of the tooth to pressure, no inflammation resulting. Possibly some of you will wonder why "1-2-3" is such an efficient and desirable agent, consisting, as it does, of cassia, carbolic acid and gaultheria; carbolic acid being not a positive persistent antiseptic, but one whose restraining effects upon the development of bacteria are only transient; oil of gaultheria being absolutely worthless as an antiseptic, and the use of cassia being so thoroughly condemned because of its extremely irritating properties. This agent depends upon the cassia for its antiseptic properties. The gaultheria is used as dilutent to the cassia. The carbolic acid was used more especially because of its anesthetic properties on soft tissue. When these three agents are properly mixed to form "1-2-3," it is the opinion of Dr. Black that there is more or less of a chemic union between them, so that the individuality of each seems to be lost, and the result is the formation of a new agent, or one with different characteristics from those possessed by the three individual agents. At any rate, it is non-irritating to soft tissue. An application left on for thirty-six hours produced no irritation whatever. There was only a slight searing and discoloration of the surface of the skin. Sores with much inflammation present were treated with the spray, which did not produce further irritation. Its action was more like that of a neutral agent (so to speak) not irritating the sore, nor, on the other hand, imparting to any appreciable extent, a soothing, quieting influence, the inflammation subsiding just about as it would if left to itself with all irritating influences removed. A sore, in which suppuration was produced, was treated with the spray of this agent. It demonstrated its right to be classed as a very potent germicide. The germs were destroyed and the pus formation ceased.

As formed with the present cassia of commerce, "1-2-3" is not so potent an antiseptic as that formed with cassia obtainable several years ago. This must be due to ths fact above stated, that cassia is so adulterated at the present time. In fact, "1-2-3" is lessened in potency in almost direct proportion to the extent of the adulteration of the cassia. Seven-tenths of a drop was effective in ten cubic centimeters of broth, as shown by experiments conducted by Dr. Black several years ago. As shown by these experiments, "1-2-3" is abundantly effective, but if cassia is continued to be adulterated, the time may come when it will not be. For general use, in the treatment of pulpless teeth, "1-2-3" is certainly an effective and excellent agent.

Carbolic acid, 95 per cent.—One and eight-tenths drops prevented development in the *unit of culture media*; sixty-one drops are required for one cubic centimeter, showing this agent effective in 1 to 338 parts. Carbolic acid is not a permanent, positive antiseptic. Its restraining power on the development of bacteria in the majority of plants one makes, is only transient. One and eight-tenths drops prevented development for three days, after which the bacteria developed in almost every instance. The restraining effect upon the development of bacteria seems to be almost in direct proportion to the quantity of the agent used in the culture-tube. The use of this agent in dentistry is so familiar I need not dwell on that point.

Oil of myrtol.—One and nine-tenths drops were necessary to prevent development of bacteria in the *unit of culture media*; sixty-eight drops constitute one cubic centimeter, showing myrtol effective as an antiseptic in 1 to 357 parts. Oil of myrtol is an agent which I have used but little in practice. In the majority of cases in which I have used it, there has been more or less tenderness of the tooth developing, so that it impressed me as being somewhat of an undesirable agent for this purpose. An application of myrtol to soft tissue

for thirty-six hours produced decided irritation, and there was a strong tendency to the formation of blister. The surface of the skin was destroyed. The irritation and inflammamation present continued for two or three days, gradually abating. A sore on a guinea-pig treated with the spray showed evidence of further irritation. So long as the treatment was continued the inflammation refused to subside. A suppurating sore being treated in the same way, was certainly benefited by a consequent destruction of the germs and cessation of pus formation. There is no doubt that this agent is quite irritating and one that should not be generally used in the treatment of pulpless teeth. There are cases where I use strong myrtol water, seemingly to good advantage, and these are in connection with abscesses with fistulous openings, especially those of long standing, in which there is more or less irritation of the soft parts throughout the tract of the fistula and that uneasy, disagreeable feeling often experienced by the patient in connection with these cases.

Oil of cajuput.—Six drops are necessary to prevent development in the *unit of culture media*; seventy-two drops are necessary for one cubic centimeter, showing this agent effective in 1 to 120 parts. Cajuput is non-irritating to soft tissue. Applications of this oil to soft tissue, retained for thirty-six hours, produced no evidence of irritation; in fact, the discoloration of the skin was very slight and remained but a short time. A sore on a guinea-pig in which there was considerable inflammation, was treated with the spray of this oil and no increase of the irritation was produced. Another sore in which suppuration was produced, was treated in the same way, with the result that the germs were gradually destroyed, its action, however, not being positive, for if the treatment was discontinued for a day or two the pus formation continued as before.

At first I used oil of cajuput more or less in the treatment of pulpless teeth, but latterly I have not used it in this connection; in fact, the only use I make of it is occasionally to moisten the inner walls of the root canals previous to filling with gutta percha. For this purpose its non-irritating nature recommends it, and especially the fact that it is a solvent of gutta percha and causes the latter to adhere to the walls of the canals.

Eucalyptol (Merck's).—Six drops each of this preparation are necessary to prevent development in the *unit of culture media*; seventy drops are necessary for one cubic centimeter, showing each preparation effective as an antiseptic in 1 to 116 parts. Eucalyptol in contact with the skin for thirty-six hours produced no evidence of irritation, inflammation, discoloration, thus proving that the agent is non-irritating and harmless in contact with soft tissue. A sore in which considerable inflammation was present was treated with the spray of this agent, with the result that the inflammation readily yielded, the irritation subsided and the sore healed, thus further proving that it is non-irritating even to injured, inflamed soft tissue. A sore in which suppuration was produced was treated in the same way, with virtually the same results as with cajuput; it exhibited a restraining influence upon the development of bacteria and pus formation, but the treatment being discontinued for a while, pus formation went on as before. As an agent to place in the root canals of teeth after the removal of a pulp, following devitalization, in order to keep the parts healthy for a few days previous to root-canal filling, it is perhaps the agent that I use more than any other. It is certainly harmless, never exciting irritation. For the purpose of slightly moistening the inner walls of the root canals previous to filling, eucalyptol is the agent I nearly always use.

The oil of eucalyptus, as found in the market, only produced a restraining effect upon the development of bacteria when a saturated solution was formed with the bouillon.

Oil of gaultheria was carried in my experiments as high as eight drops, this quantity forming a saturated solution in the *unit of culture media*; that is to say, the broth had taken up or dissolved all of the oil that it could possibly retain, there being also a large number of free globules floating about in the broth, and still development of bacteria took place quite abundantly, showing that this agent is useless in restraining the development of bacteria.

Eugenol.—This agent resulted in the same way as gaultheria. Eight drops were used in the *unit of culture media*, which amount formed a saturated solution with numbers of globules of the free oil floating about, and still the bacteria developed, thus proving that eugenol, also, is useless as an antiseptic.

Formalin.—Of late the dental profession has taken up this agent for the treatment of pulpless teeth and abscesses, for devitalizing pulps, etc., and many are reporting wonderful results from its use. Not long since I read an article in one of our journals in which the writer paid a glowing tribute to this agent as a most efficient and desirable one for the treatment of almost all conditions of pulpless teeth. Having had some experience with it myself, and because of many negative results experienced, being suspicious whether it was a proper agent to be used about the mouth, I decided to investigate it as thoroughly as possible. First I tested it as to its antiseptic properties, and found it to be very powerful. Of the formalin preparation, which is a saturated solution of the gas formaldehyde in water (the latter taking up about 40 per cent. of the former), four-tenths of a drop prevents development of bacteria in the *unit of culture media*; fifty-six drops are necesssry for one cubic centimeter. This shows formalin potent as an antiseptic in 1 to 1400 parts. Somebody has been so enthusiastic over this agent as to make the statement that it is fully as potent an antiseptic as bichlorid of mercury. This is certainly a mistake. I prepared a 1 to 1000 solution of bichlorid of mercury and found that it required nine drops of this solution to prevent development of bacteria in the *unit of culture media*. I prepared a 1 to 1000 solution of pure formaldehyde, which we now have in a solid state —the gas being reduced to such by chemic processes— and of this solution found that it required forty drops to prevent development of bacteria in the *unit of culture media*, thus proving that formaldehyde is not so potent an antiseptic as bichlorid of mercury by at least one-fourth. I next resolved to determine its ability to irritate soft tissue, the same as I did with the other agents. I took a small pellet of cotton, saturated it with formalin, placed it in a small rubber cup to prevent evaporation, placed it on the surface of the skin on the lower part of my right leg and covered it over with a large piece of court-plaster stuck tightly about the edges. This was placed there March 14, 1898, at 12:30 A.M. I went to bed and went to sleep. Between 4 and 5 in the morning I was awakened by pain, and could get no rest after that. The pain

was intense and of a very peculiar character. It seemed as if something were inside my leg gripping it with a vise. Then it would take a turn and twist about, as if tearing the inside out. It would stop for an instant, and then the performance would be repeated with renewed vigor. The pain continued more or less severe all day. I wished to keep the application in place for twenty-four hours, the time adopted for the other agents, but at the end of twenty hours, the pain had been so constant and the tissues began to look so ugly, that I concluded to remove it. The tissue to which it was applied and for about two inches in all directions was turned as white as pure snow, as if all the blood were driven from the parts. The pain was lessened very considerably in a short time after the application was removed. The tissue to which it was applied was perfectly anesthetized to a considerable depth. Just at the circumference of the application there was considerable tenderness. There was much swelling, which seemed to be more like that of edema than of true inflammation. In two or three days some color began to return to the parts, except those to which the agent was directly applied, which never regained normal color. In two days more a line, purple in color, began forming at the circumference of the point of application—a line of demarcation—and it became apparent that there was to be a break in the tissues. This break occurred and sloughing took place; considerable tissue was lost all over the surface of the inflamed area. The tissue in the center raised about the edges, but was very obstinate about coming away. From the time the agent was thoroughly absorbed in the tissues, physically I was not up to the standard; my appetite was more or less impaired, the digestive and eliminative organs were somewhat interfered with. These conditions continued to grow worse until the climax came in a bad case of systemic poisoning, the poisonous matter being thrown off through the medium of quite a severe diarrhea, and also much vomiting—the former continuing for a period of three days, the latter for one, following which time my physical condition rapidly improved.

Having seen a number of cases which have been treated by physicians with various percentage solutions of formalin in which more or less sloughing of the parts has resulted—one which I saw not long since in which as low as a 2 per cent. solution was used, in connection with which considerable sloughing resulted—and also because of the very vivid recollections of my own experience with it, I have come to the conclusion that we should get along without it in the treatment of diseased conditions about the mouth.

As I have devoted a paper to this agent before another society, I will not give my observations of it in more detail here. My paper is now too long for me to consider the subject of the selection of antiseptics with a view to utilizing their therapeutic effects in individual cases in connection with their antiseptic powers. but this can be fairly made out from the observations related.

Exercises for the Deaf and Dumb.—Marage proposes exercises, first music, produced by the phonograph, to accustom their ears to simple vibrations. Then the note corresponding to the sound of each syllable, using tuning-forks and sound-collectors, thus proceeding gradually to the more complicated exercise of the vowels, using at first the sound collector and finally the voice alone.—*Bulletin de l' Acad. de Méd.*, November 22.

OTITIS MEDIA, WITH TRIPLE PERSONALITY.

Read before the North Central Ohio Medical Society, Sept. 30, 1898.

BY A. J. ERWIN, M.D.

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MANSFIELD, OHIO.

It is not the purpose of this paper to enter upon a critical discussion of otitis media, any further than seems necessary to properly bring before you the history of an unusually interesting case, which has been under my care for the last few months.

Purulent otitis media may be idiopathic, or secondary to catarrhal otitis, or to an attack of the exanthematous fevers, notably scarlet fever or measles. It consists of an acute inflammation of the lining membranes of the tympanum, which may extend to the mastoid cells, and to the eustachian tube, attended by severe pain, fever, and more or less swelling of the external auditory canal and its environments, with early spontaneous perforation of the drum-head, unless previously punctured. After the free escape of the pus, the pain, swelling and fever subside; under favorable conditions and treatment, the discharge ceases within a fortnight—it may stop in a few days, or may continue several weeks. The perforation of the drum-head generally closes, unless very large, with ultimately perfect, or nearly perfect hearing; in many cases however, the ear is left subject to frequent relapses of the disease, either on account of a constitutional dyscrasia, or because of a degree of chronic irritability remaining from the acute attack.

I will not take your time with a rehearsal of the therapeutics of purulent otitis; you will find it in full in the recent text-books on otology. I will proceed to give you an outline of the case mentioned.

Lucille, aged 8 years, has always been rather delicate in her appearance, but has had fair health; she had otorrhea more or less continuously from the age of 3 months in both ears, until three years ago. In June, 1895, she came under my care, with chronic purulent otitis media. Each drum head was perforated in the lower quadrant, the right about 3 mm. in each diameter, the left 5 to 8 mm. After four months' treatment I dismissed her apparently cured, the discharge had entirely ceased, the surfaces had become normal and the perforation in the right drum head had closed. In the early spring of 1897 she had a catarrhal attack of otitis in the left ear, lasting about one week. About May 1, 1898, she had an attack of measles, followed May 15 by a severe otitis media in the left ear, and a week later in the right ear. There was not much pain or swelling of the left ear, the drum head being open, but the right ear was very painful and considerably swollen below and in front until after perforati on of the drumhead. On neither side was there at any time pain, tenderness or swelling over the mastoid, and as there was free egress of the pus through the open Eustachian tubes and large perforations in the drumheads, there did not seem to be any indication for surgical interference. There was nothing distinctive or peculiar about this attack, although she was rather slow in making a recovery. In about one month the discharge ceased, the right perforation closed and all evidence of irritation disappeared from each ear soon afterward. Since June there has not been any pain or any other evidence of disease in or about her ears. Hearing, R. $^{30}/_{10}$, L. $^{9}/_{10}$.

I will go back now to the very interesting part of this attack. About May 18, the third day of the disease, she began to show the following peculiar nervous phenomena: Several times a day seizures occurred which seemed to be simply a sudden suspension of respiration; she did not, apparently, breathe for the space of from one to five minutes; there were no convulsive movements; pulsation not much affected; she was conscious and rational, could not speak, but made motions with her hands, wishing to be fanned. As the seizure passed off she would whisper, "I can't see, or hear, or feel." At first these seizures occurred several times a day, but since the middle of June, they only occur once a day, when she retires at night.

These seizures are not like anything that I have ever seen—they are neither epileptic, petit mal nor syncope. As I have said, there is a sudden suspension, apparently, of the respiratory act; that is all. What breathing occurs is so slight as to cause scarcely any motion of the chest walls. But this is not her only nervous disturbance.

We will go back again. Since about June 1 she has had attacks of double and triple consciousness several times daily; for the first two months double, for the past two months triple. At first Lucile and Imme; now Lucile, Imme and Dorothy. Lucile is the normal self, intelligent, quiet, sensible, a dainty, delicate girl, well advanced in school, and who, without having taken any instructions in music, plays the piano nicely. Imme, the second personality, is a bright, more vigorous, rather boisterous girl of 4 years, which she claims to be her age, talks and acts as she did at that age, knows her parents and the family, but names them a little differently than when her normal self. For example, she at first called her mother her big sister. She has no knowledge of Dorothy, but has an indefinite acquaintance with Lucile. When spoken to about Lucile, she goes to the window to look for her; says she does not like Lucile, because Lucile does not like her; when she looks in the mirror she says, "That is Lucile; she is making faces at me;" says "Lucile is a crazy thing; I have three crazy people: Lucile and you and the man that use to come with you" (Dr. Mecklem, the family physician).

Imme has always called us the crazy men; she plays the same pieces on the piano as Lucile, is vivacious, comprehends anything quickly and gives ready answers; but as a child of 4 years, she lacks schooling; says she has never been at school; knows nothing about books, although she can read. Imme's intelligence is improving rapidly.

Dorothy, the third personality, is a child just beginning to talk; she creeps on her hands and knees; will not try to stand on her feet; cries for the nursing-bottle; calls her brother "Bud," as she did when a child; a name that has not been used in the family since her childhood. She puts everything she finds on the floor into her mouth. Childlike, calls "papa" and "mamma" and knows them, but has no knowledge of Imme or Lucile.

These three personalities are entirely separate and distinct; each has her own facial expression, language and style. The normal Lucile has no knowledge of the life of Imme or Dorothy. She has been told of them, but does not like to hear of them; thinks that she sleeps during the stages of those personalities. The rotation of these three selves is not regular: either one may follow the others. She is Lucile all night after retiring, and may continue to be Lucille well into the forenoon, or may awake in the morning as Imme or Dorothy; she changes personalities much more frequently now than at first—generally every hour, and often several times an hour. The changes are in this wise: Lucile suddenly drops into a sound, peaceful sleep for a few seconds, and then as suddenly awakens as Imme or Dorothy, with a new expression and voice. In the course of an hour she again drops asleep, so suddenly, that if standing she falls, and after a few seconds of quiet sleep, again awakens another self, with the voice, language and expression of the age she represents. Each of the personalities remembers its own acts and experiences, but never refers to, seems to have any knowledge of, nor mentions the acts of the other personalities.

Several similar cases have been studied within the past few years, and reported at length in various publications; notably the following: Louis V. reported by Dr. Voisin—a healthy boy, age 14 years, was scared by a snake and soon afterward developed five distinct alternating personalities. Felida X., an epileptic, age 14 years—reported by Dr. Azam—with double personality. Ansil Bourne, an adult with double personality—reported by Drs. James and Hodgson. The much interviewed, Mary Francher—reported by Dr. Speer, and the subject of a life history by A. H. Dailey—with five attending personalities occurring only at night; separated by epileptic seizures, the result of a severe fall on her head caused by a runaway horse, and a street-car accident. Miss Alma Z. with three personalities, supposed to be due to overstudy and general debility—reported to Dr. Osgood Mason. Madam B.—reported by Drs. Janet and Gilbert—with three personalities, caused by hypnotism. Miss Louise, with double personality caused also apparently by hypnotism—reported by Dr. Janet.

These cases you observe, are of different ages, and of each sex, and with different exciting causes; one, a fright; one, overstudy; one a fall on the head, with concussion of the brain; one, long-continued epilepsy; one, a man in good health without any known cause; and two caused apparently by hypnotism.

The etiology and the morbid anatomy of the disease are not understood, no constant brain lesion has yet been observed. There has been a good deal of speculative writing in explanation of this mental condition, under the titles of "Unconscious Cerebration;" "The Subliminal Self;" "Subconscious Personality;" and the "Secondary Self," but all have failed so far to give us a tangible etiology of the disease. The question arises: What is it? We may exclude hysteria, as the new self has no characteristics of that condition; we may exclude insanity, as the new self is strictly rational; we exclude delirium, as these new selves have neither frenzy nor hallucinations; we exclude hypnotism, for, while hypnotism may be the proximate cause of these manifestations in some cases, the will is not in abeyance or subject to the suggestions of the hypnotist; and we exclude somnambulism, which it somewhat resembles, for the somnambulist deals only with current affairs. I think we are obliged to give it an independent place among the neuroses, at least for the present; its distinctive feature seems to be simply an involuntary reversion of consciousness from the current normal, to the mental state of an earlier date in the life of the individual, striking new prints from the old negatives, long stored away in the dark-room of the brain. On one important point in the case under my care I am in doubt. Has the ear disease developed a brain lesion, or simply awakened a dormant neurosis?

A CASE OF MASTOIDITIS.

DUE TO PURULENT OTITIS, AND COMPLICATED BY SINUS THROMBOSIS AND EPIDURAL ABSCESS.

Read before the Chicago Ophthalmological and Otological Society, Nov. 8, 1898.

BY ALBERT E. BULSON, JR., B.S., M.D.

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FORT WAYNE, IND.

A man aged 45 years, by occupation a passenger brakeman, consulted me on May 30, on account of a discharge from the left ear, attended by pain, tenderness, and swelling in the region immediately behind the auricle. The following history was obtained:

The patient had enjoyed good health and had suffered from no ear affection until about Jan. 1, 1898, when a severe cold in the head terminated in acute otitis media of both ears, with resulting suppuration of the left ear after a period of eight or nine days of intense suffering. Prior to spontaneous rupture of the membrana tympani the patient had suffered for two or three days with pain and tenderness behind the ear, but this partially subsided with the appearance of discharge, though it continued, together with the discharge, as one of the symptoms leading him to consult me for relief, five months later. For a period of two or three weeks immediately preceding the time that I first saw him, the discharge, rather more copious than usual, had been associated with an unusual amount of tenderness and pain behind the ear, the

latter affecting the entire left side of the head. On the morning of the day the patient consulted me he had suffered from a slight chill, followed by a moderate rise of temperature and increase of pain on the left side of the head. Slight dizziness was complained of, but no nausea.

An examination with the speculum and reflected light revealed the existence of a thick mass of epithelium, pus and cheesy matter, which, when removed by careful syringing, disclosed a large central perforation of the membrana tympani. The posterior bony wall of the meatus appeared intensely congested and sensitive. The auricle was pushed out from the head by the mastoid integuments, which latter were markedly edematous and tender to pressure. Temperature was 99.5 degrees.

An operation was advised and consented to and four hours later a radical mastoid operation was performed at St. Joseph's Hospital. The mastoid antrum was thoroughly uncovered, about a half dram of pus evacuated, and communication between the antrum and middle ear established. The entire pneumatic structure of the mastoid process was entirely obliterated, and the sharp curette freely used until sound bone was supposedly encountered in every direction. The cavity was packed loosely with iodoform gauze and light outer dressing applied.

At the end of twelve hours the patient said that he was free from pain for the first time in many weeks. His temperature, however, was 101 and increased within forty-eight hours to 103 degrees, when the dressings were removed and considerable secretion discovered. The parts were irrigated freely with a hot antiseptic solution, the fluid being introduced through the artificial opening and allowed to pass out of the meatus. Daily irrigation and dressing became necessary and under this treatment the secretions gradually lessened and the temperature declined until at the end of eight days, when the patient was removed to his home, the wound was comparatively dry, the temperature normal, and the patient feeling well. There was, however, moderate tenderness at the temporo-sphenoidal region and there appeared to be more tenderness at the extreme tip of the mastoid process than could be accounted for by the soreness of the tissues wounded during the operation. The patient seemed to be making a speedy and satisfactory recovery, so little attention was given the matter.

At the end of three weeks he complained of a dull deep-seated pain in the mastoid region, but as no marked tenderness, tumefaction or systemic disturbance developed, no particular attention was directed to this symptom. The pain continued, however, with varying intensity, but unaccompanied by other marked symptoms, until the morning of June 25, five weeks after the mastoid operation, when he had a decided chill, followed by rise of temperature, dizziness, nausea, and severe pain throughout the entire left side of the head. The patient was not seen by me until evening when the temperature was found to be 105 degrees, and pulse 160, pupils normal, slight nausea, severe pain throughout the entire left side of the head. Marked tenderness was present over and above the apex of the mastoid process, and extending down along the line of the external jugular for a distance of two or three inches. The mastoid fistula, which, when examined several days previously, had been dry and apparently in perfect condition, was now found to be discharging foul pus. Hot antiseptic irrigations were ordered. On the following morning at 8 A.M., the temperature was 102 degrees and pulse 100. Pain and tenderness were still marked, with slight nausea and pupils normal. The patient was removed to St. Joseph's Hospital. At 7 P.M. the temperature was 101.5 degrees, pain severe over the mastoid area, extending to occiput, and down the line of the external jugular to border of the clavicle, with tenderness over the jugular and mastoid apex. The attendants reported that the patient had perspired profusely during the day.

A diagnosis of sinus thrombosis and probable complicating meningitis was made, and operation advised. On the following morning, June 27, the patient's condition continued the same as on the preceding night, with the exception of increase of temperature to 102.5 degrees. Under ether anesthesia an extensive incision, along the line of the previous incision for mastoid operation, was made, sufficient bone being uncovered to admit of operation for exposing the temporo-sphenoidal lobe, or lateral sinus. Upon uncovering the mastoid process and exploring the previously opened antrum, an extensive caries of the wall was discovered, which involved the entire tip of the mastoid, and the inner table over an irregular area fully one and one-half inches in diameter, upward and backward. A second incision, at right angles to the first and extending backward about two inches, was now made, giving two flaps which, when drawn aside, gave the necessary enlarged field for operative procedures. With the rongeur forceps the softened bone was carefully removed until about one inch of the lateral sinus was uncovered and the temporo-sphenoidal lobe exposed. The sinus throughout the extent uncovered appeared indurated, with irregular reddened surface, significant of periphlebitis, due to extension of inflammation from the carious outer cranial wall lying in immediate contact with it. Palpation failed to detect pus or evidence of a decomposing clot, though the feeling of the vessel under digital examination, coupled with the symptoms manifested, seemed to indicate the existence of a phlebitis so extensive as to not only involve the sinus walls but obstruct the lumen of the vessel as well. The exposed dura of the temporo-sphenoidal lobe appeared congested and roughened from the deposit of inflammatory material, indicating meningitis, which was thought to be circumscribed and confined to the area immediately surrounding the carious process of the cortex. As fully one inch of the lateral sinus was thoroughly uncovered, the overlying softened bone having been completely removed, thus rendering it easily accessible for operative procedures, it was thought best not to immediately open the sinus, though I felt fairly well satisfied that a thrombus existed. This course appeared justified in view of the fact that no positive evidence of fibrinous clot or pus formation within the sinus could be detected, and the carious process already relieved seemed all sufficient to produce the circumscribed meningitis and periphlebitis, the symptoms of which had led to the operation. The wound was therefore given a light dry dressing and the patient put to bed.

For three days after the operation the temperature ranged from 101 to 103.5 degrees, the patient still complaining of pain throughout the entire left side of the head, and experiencing marked tenderness along the line of the jugular nearly to the border of the clavicle. On the morning of the fourth day he had a chill, followed by vomiting and a rise of tem-

perature to 104.5 degrees. Upon removal of the dressings, which up this time had not been disturbed, a faint suspicion of pus was found oozing from beneath the skull, in the tempero-sphenoidal fossa. A small probe was carefully pushed between the inner table and dura, upward and backward along the track of this oozing, for a distance of an inch or more. The withdrawal was followed by a few drops of pus, making it evident that a pus cavity was located in the region explored. Deeming it necessary to have the patient under general anesthesia in order to thoroughly evacuate the epidural abscess, as well as to explore for other infectious foci, it was suggested that ether be administered at once, but to this he emphatically objected, saying that he preferred to die rather than submit to further operative procedures. I then decided to enlarge the fistulous opening as much as possible by hurried but forcible pressure with blunt probe, and trust to drainage for the rest. The passage of the probe, though exceedingly painful, resulted in draining the abscess cavity of, perhaps, a dram of bloody pus. A light gauze dressing was applied. Three hours later the temperature had dropped to 101 degrees, and there was a decided lessening of pain. For two weeks following this the temperature varied between 101 and 102 degrees, with an occasional chill to break the monotony, and for fully ten days longer the temperature varied between 99 and 100 degrees. The wound was dry dressed twice daily for three or four days, and then once daily for a week, at the end of which time the parts, including the middle ear, what remained of the mastoid antrum, and exposed parts of the dura mater and lateral sinus were free from discharge. The tenderness along the line of the jugular slowly disappeared, though it could be detected as long as three and a half weeks after the second operation. A moderate amount of pain on the affected side continued for fully a month, but finally disappeared altogether.

The patient, under good nursing, stimulating and tonic treatment and careful attention to all eliminative functions, slowly recovered strength, and finally returned to work about the first of October, three and a half months after his last operation, and is now running regularly between Chicago and Fort Wayne. The wound has gradually filled with granulation tissue, though an extensive scar, with marked depression of contour of the skull exists.

The case presents many interesting features, among which are:

1. The development of a well-marked sinus phlebitis, with probable thrombosis, after apparent recovery from abscess of the mastoid antrum which had been thoroughly evacuated. I attribute this to infection arising from carious bone at the bottom and inner aspect of the large cell at the apex of the mastoid process, which was probably overlooked at the time the mastoid operation was performed. This carious process, easily overlooked in the mastoid antrum owing to the small area of presentation in that cavity, undoubtedly involved the inner table at the time of the mastoid operation, and if removed at that time would have obviated the necessity of a second operation.

2. The final disappearance of this phlebitis and probable thrombus without the development of other pyemic manifestations, such as pulmonary infarcts or abscesses in other portions of the body, or a fatal termination.

3. The development of an epidural abscess somewhat remote from the site of the carious process, and not discovered nor suspected at the time of the second operation. This was probably occasioned by the burrowing of pus from the original mastoid abscess and subsequently becoming walled off by adhesive inflammation.

4. Demonstration of the necessity of thoroughness in mastoid operations, which should not only include free opening of the mastoid antrum and obliteration of pneumatic structure, but careful search for and removal of small areas of diseased or carious bone.

55 West Wayne Street.

TOOTH FORMS IN RELATION TO JAW MOVEMENTS.

Presented to the Section on Stomatology, at the Forty-ninth Annual Meeting of the American Medical Association, held at Denver, Colo., June 7-10, 1898.

BY ALTON H. THOMPSON, D.D.S.

TOPEKA, KAS.

The writer feels like apologizing for addressing the Section upon such a simple thing as the relation of tooth forms to the movements of the jaws, and in defense makes the excuse that there is, as you well know, such a general misapprehension and lack of appreciation of many such simple principles of the profession that reiteration is never out of place. The writer has hopes to enlist the interest of the Section in the cultivation of a better appreciation of at least one of these simple principles. It is not sufficient to say that these things are found in the text-books. The text-books are rarely studied and the living principles must be presented over and over in meetings in various forms of dress, that all kinds minds may be reached and interested and lifted up.

To be brief, therefore (in a paper which can only be suggestive), we wish to call attention first to the causes of the various forms of jaws and teeth found in the animal kingdom. In following the teachings of evolution we must understand that function is the cause of structure, and that organs are created in response to demand for performance of functions. The teeth were therefore produced for the purpose of performing a function and that function is the reduction and preparation of food for digestion. Not only were the teeth produced for this purpose primarily, but by the variations presented by different kinds of food animals came to employ, they have been infinitely modified and many various types evolved. This adaptive modification has led to the almost endless varieties of teeth and masticating apparatus found throughout the animal kingdom, all of which are adapted to the reduction of particular kinds of food. To the primary function of food reduction, there must be added the secondary offices that the teeth are often modified to perform, as tools, implements, weapons, etc.

The food-supply is one of the most potent influences in the environment of animals, and is secondary only to climatic conditions in determining the course and forms of life. The variation of the quantity or quality of the food-supply has led to the modification of all the species that have lived upon the earth. Gradual and persistent deviation has been the most potent for a change in structure, while sudden alterations in the food environment have resulted in the extinction of whole genera of mammals. The work of dif-

ferentiation and conformatory adaptation of the masticating apparatus and teeth has progressed onward through the eons until the result is an extensive and most wonderful variation. But in all the variation and complexity of structure, we observe a remarkable adaptation of means to ends, of instruments to purpose, of tools to material. The cause is the material, the tool is the result. The variations in the food-supply caused the variations in tooth forms.

The same law applies also to the evolution of the jaws and masticating apparatus, the support and environment of the teeth, which were developed by adaptive modification for the same purpose, viz., the reduction of food preparatory to digestion. The teeth being merely the armament of the jaws, it follows that they were developed with them for the same purpose. The lower jaw or mandible has been described as a lever of the third class, in which the glenoid cavity is the fulcrum, the muscular force the power and the resistance of food the weight. Since the co-efficient of muscular power is 104 pounds per square inch, it is easy to surmise that the tendency of the exertion of the great masticating muscles upon the jaws and teeth must be to react powerfully upon those structures directly subjected to the resulting strain.

The principles of construction and motion of the specialized parts devoted to mastication and the precision and force with which this function is performed in the majority of animals possessing vertic mandibular occlusion, are wonderfully illustrative of the capacity of the animal mechanism for the display of power. The modification of the forms of the teeth and their supporting mechanism is directly due to the force of occlusion and of jaw movements. These tissues, like other parts, are disposed to develop in the line of greatest resistance in order to meet the demands of use. This is what Dr. John Ryder calls "displacement due to strain." He says, further, that "many of the parts associated in the function of mastication are greatly modified and brought to their present shape by the resistance incident to its performance. . . . There are distinct kinds of mandibular movement, and each kind corresponds to one very distinct type of tooth. Thus, in the carnivora, the tubercles are laterally compressed and raised into sharp edges to form effective cutting instruments, the teeth being developed in the direction of the vertic movement of the jaws." In the opposite extreme, the herbivora, the lateral movement of the mandible causes the plication of the molar crowns in a line transversely to the direction of the strain exerted during mastication. As the excursive movements have increased in complexity there has been increase in the complexity of the enamel foldings, ridges, crests, etc. It is concluded, therefore, that the various forms of teeth and mandibular articulations have been molded into shape by the jaw movements and force of occlusion and also that they bear a direct relation to each other and exhibit associated types that are constant.

To go into some detail, we find that in the lowest and simplest form of tooth, that of the single cone, the reptilian type, it is associated with a mandibular movement that is purely vertic, mere opening and closing. This movement performs the one function of the teeth, i. e., prehension, for division and mastication of the food is unprovided for in these animals. There is wide opening of the jaws and after sharp closure a pulling motion is exercised. To resist these motions the teeth alternate above and below and are long, conic and sharp and slightly recurved to hold struggling prey. The teeth and jaws are well adapted to perform their functional duties together.

Among mammals, the two great extremes of types are the carnivora and herbivora, with some intermediate and composite types which subsist on an omnivorous diet. The carnivora, as you will recall, are possessed of a mandibular articulation which is like a simple hinge that allows of but one movement of the jaw, i. e., opening and closing, with no lateral excursion whatever. This movement requires the long canines and the long blades of the premolars to pass close to each other in the seizing and cutting of flesh, with a shear-like motion. The condyles are also shaped to resist the strong pulling motion which the curved canines are formed to effect in tearing flesh. The blades of the premolars and molars are developed vertically in the direction of greatest force, to effect the cutting of flesh. The jaw bones are short and stout and the closing muscles strongly developed to effect strong vertic force. The *Viltdæ* present this extreme modification, but there is a general departure from this type through the hyenas, dogs, bears, and other omniverous animals which employ a mixed diet. The jaw articulation becomes more open, to allow of some lateral motion of the jaws; the teeth become modified to the tubercular form to masticate vegetable food, and the grinding teeth increase in number as the function of mastication comes more into use. In the Filidæ, the true cats, there are no tubercular teeth and no mastication, but in the more omniverous carnivora there is development of number and tubercularity of the teeth, and the jaws become longer.

In the other extreme, that of the herbivora or the plant-eaters, we have in the ungulata the best example of extreme lateral excursion of the mandible. This is due to the open temporo-maxillary articulation allowing extensive movements in various directions, but not much vertic play. There is also less density and diameter of the jaw but much lengthening. By a peculiar arrangement of the dental tissues, the wear of mastication preserves a constantly rough surface for the effective trituration of resisting vegetable fibers. The lateral movement of the jaws produces lateral extension of the teeth, in obedience to the law of development in the direction of resistance and use. The pigs show the first tendency to lateral movement and have lengthened crown crests to meet this movement in masticating. The tapir presents a little more lateral movement, and the kangaroo still more, with corresponding folding of the crown crests. The rhinoceros, the horse, and their allies, have a larger jaw excursion, and the ruminants most of all. The forms of the molar crowns follow the law of displacement due to strain, and in the latter class present many very complex patterns, as in the ox, deer, sheep, etc., owing to foldings and complications of the crown crests. The movements of the jaw are lateral, anterior-posterior, and diagonal, and in consequence the crowns of the molars are extended horizontally, with resisting ridges in every direction opposed to the horizontal movements. Other herbivora, as the rodents, have complicated molar patterns also. Some, as the beaver, have molars composed of transverse plates of enamel, which are so arranged as to resist the antero-posterior mo-

tion of the jaw, which is the main movement. This is also the main motion of the proboscidæ, the elephants, mastodon, etc., which have ridges of enamel arranged transversely to resist this main masticating movement.

In regard to man, who is a simple bunodont of primitive type, there are limited antero-posterior and lateral jaw movements with slight crown crests and cusps to oppose them. Like the bears and most omnivorous animals, the crests are weak, and tubercles for mere crushing are the most marked feature of the occluding surfaces of the molars. The dentition of man is much like early types found in the eocene geologic formations, which were much generalized and from which the later more specialized forms were developed. Both his teeth and jaws are degraded if not primitive in type.

MANAGEMENT OF PULPLESS TEETH.

Presented to the Section on Stomatology, at the Forty-ninth Annual Meeting of the American Medical Association, held at Denver, Colo., June 7-10, 1898.

BY J. TAFT, M.D.
CINCINNATI, OHIO.

Two thoughts induce us to present the following suggestions upon the subject indicated by the above title: 1, that pulpless teeth and roots are susceptible of being retained in the mouth and made serviceable and comfortable under a proper treatment, for a much longer period than is usually realized in the modes of treatment adopted; 2, faulty management is so very common that it would seem important that some effort ought to be made for a better mode of procedure in this particular of practice. It is entirely familiar to all dentists of much observation and discrimination, that by far the larger share of disease and discomfort from affected teeth occurs in cases where the pulps have been destroyed (usually the result of decay). Disease and severe pain many a time occur before devitalization of the tooth-pulp, and without some appropriate treatment, the teeth are disintegrated and destroyed.

Physiologically, teeth pulps were intended to serve a valuable purpose during the life of the organs with which they are associated. There is an important function which they should serve during this period, but unfortunately, from one cause or another, there are multitudes upon multitudes of pulpless teeth and roots. The common occasion of death of this tissue is by decay of the teeth. Subjecting the pulp to exposure, irritation, inflammation, hypertrophy, suppuration and death, this is the common result of this process. Pulps are, however, frequently devitalized in other ways. Calcific deposit in the pulp chamber or in the pulp itself, or upon the apex of the root, cutting off its vascular and nerve supply, is not an infrequent occasion of pulpless teeth. In the low state of health when the nutrient function is impaired, its tissue sometimes becomes devitalized without any apparent cause. The conservation of exposed tooth-pulp, is a mode of practice that under favorable circumstances and with proper skill is entirely practicable; in a very large percentage of exposed pulps, as they are found, it is the result of decay. The indications presented in many cases are not such as to promise much good for conservative effort and hence it occurs many times that the destruction of the pulp is a necessity, if the best results are to be attained.

The best method of accomplishing this is not always employed. Many methods have been used which we will not fully consider here. It is hardly proper to pass from these points, however, without two or three suggestions. One is that when an exposed tooth-pulp is to be devitalized and removed, its conditions should be as thoroughly understood as possible, and not only this but the peculiarities, whether normal or abnormal, should be understood. The practice of applying poisonous escharotics, as arsenious acid, for example, should always be avoided. With the appliances and facilities at the command of every dentist the use of such agents is wholly unnecessary and especially so when it is considered that most serious results follow their use in some instances, in either the immediate or remote future, and especially to those highly susceptible to the poisonous influence of arsenious acid or similar agents. Specific results in some instances occur within twenty-four hours; these results, however, may be in other cases delayed for weeks or months before manifesting any action in a very marked manner. It is better that these agents never be used for this purpose and that some methods should be employed that would not leave a sting behind. Since cocain has been used as an anesthetic, there has been no occasion for using a more violent agent, as by proper application to, or injection of the agent into the pulp it may be so anesthetized that its painless removal is an operation entirely practicable. Since the general introduction of anesthesia by cocain and the electric current (cataphoresis), it is a very simple operation to render an exposed pulp entirely oblivious to contact, when it can as easily be removed from its habitat as any other tissue of the body. This can be done by the use of the barbed broache or a sharp pulp-extractor. In the performance of this operation, the teeth should be perfectly protected by the rubber dam, from the saliva or any agent that would convey infection. The instruments employed in the operation should be absolutely aseptic and kept as nearly so as possible during the operation.

The broaches, if they are used, should be moistened during the operation with some efficient antiseptic fluid. The instruments used in cleaning out the canal should be used with the same precaution. When the pulp chamber and canal have been treated in this manner it is the best possible condition for permanent enclosure, unless there is a persistent hemorrhage or weeping of the plasm from the foramen into the canal, and that in most cases is readily arrested by some appropriate styptic or coagulent, as Lugol's solution, tannin, persulphate of iron and numerous other things that will suggest themselves to the intelligent dentist. In by far the larger portion of cases this flow will cease spontaneously in a very brief time, but if not it may be assisted as above indicated. When the pulp has been brought to this condition and thoroughly dried by a jet of warm air or by the use of a copper root-drier, it is in the best possible condition for permanent enclosure. In such cases nothing can be gained by the very common prolonged treatment preparatory to filling. The best time for closing such cases is immediately. If there is a doubt as to the entire arrest of the plasm flow through the root, it may have packed into the canal a small pledget of lint, moistened with some astringent, then fill the canal with Hill's stopping or some material that will be impervious. Twenty-four hours will be sufficient to determine whether the flow has been entirely arrested.

Before removing the temporary stopping the rubber dam should again be used, when it will be determined whether there remains any discharge; if not, the cavity may be wiped with lint moistened with a solution of salicylic acid, when the canal and pulp chamber should at once be thoroughly filled with a material that will wholly exclude moisture in any form. Care should be exercised in filling the extreme part of the canal where there is no disease in the apical space. Any treatment after the canal and pulp chamber have been brought into the condition above described is liable to be fraught with disaster.

It is a very common practice with many to persist in what is denominated "root treatment" for days, weeks and sometimes months, in just such cases as this, a practice that ought to be discarded and condemned.

In filling roots of teeth, many methods are employed. The aim in every case should be to absolutely close the extreme end of the canal, and the canal itself, in such a manner as to prevent the entrance of septic matter or anything that would convey it. Roots of teeth have been filled with lead, tin-foil, gold-foil, gold, wire, gutta percha in solution and Hill's stopping in solution and solid. By any of these methods in skilful hands, this work can be very perfectly and efficiently accomplished.

The late Dr. W. N. Morrison of St. Louis practiced filling roots with gold wire made as nearly the size and shape of the canal to be filled, as could be estimated, shaping the wire so that it would pass to the end of the canal, then covered the wire with a solution of gutta percha or Hill's stopping, and forced it to its position in the canal, cutting it off in the pulp chamber. The same method was adopted when lead was used instead of gold, by the late Prof. Peabody of Louisville, Ky. Shaping the lead so as to fit as closely into the canal as possible, covering the lead with a gutta purcha solution, press or drive it to its place in the canal, and cut it off in the pulp chamber.

Dr. H. J. McKellops follows practically the same method, using, however, a cone of gutta percha or Hill's stopping the size and shape of the canal, moistening with a gutta percha solution and pressing it to its place. These methods or modifications are much used in filling roots of teeth.

Dr. C. R. Butler of Cleveland, Ohio, usually fills roots of teeth with tin-foil, cutting into narrow strips, packing into the canal with an appropriate filling instrument, by this means absolutely sealing it. Gold-foil used in this way has no advantage over tin. The methods of root management as above indicated are the most simple and the most successful.

In the preparation of decayed teeth with open pulp chambers, the tissue has at the present a great number of phases. The forms more simple than those described above are those cases where the pulp from exposure has become diseased and devitalized as the result, and is simply sloughed away or remains as lifeless matter in the canal, with little or no discharge from the foramen at the end of the root, and no periosteal disturbance. In these cases the requirements are, first to wash out the cavity as thoroughly as possible with a syringe with a disinfectant fluid, then with an appropriate instrument remove all débris that is not washed away, then open and shape the canal so as to readily facilitate the work to be done. Disinfection and antisepsis are always required more or less for these cases. It is well in some cases to remove more of the dentine from the walls of the canal than would be required in those from which a living pulp had been removed. This is necessary because the decomposing matter in the canal comes in contact in the mouth of the canals and vitiates their contents to a greater or less extent, according to the susceptibility of this material and the offensive condition of the contents of the pulp canal. The contents of the canals of the dentine in many cases remarkably resists the pernicious influence of the fetid matter of the pulp canal, but in other cases is greatly susceptible to its destructive influence. In the latter case it is important that the walls of the canal be cut away so as to remove this offensive material. In such a case a thorough antiseptic and disinfectant treatment should be employed. In many cases much more should be done in the way of cutting from the canal walls than is done by many. In this case sulphuric acid may be employed with very decided benefit. It readily enters the canal by dissolving its walls, is an antiseptic, and would arrest decomposition of the contents of the dentine canals, so far as it could be brought in contact with it. Care should be exercised in the use of sulphuric acid for this purpose, that it does not pass through the foramen at the end of the root, as it would there be an active irritant.

After the canal has been treated in the manner suggested, it is important to determine whether there is any discharge of any sort from the apical foramen into the canal; if so, that condition must be changed. This can in some instances be effectually done by thoroughly filling the extreme end of the canal. This procedure is practicable in cases where the flow is not copious and consists in the main of the plasm of the blood. This arrest may in some cases be promptly accomplished by the use of a coagulant packed well into the canal and permitted to remain for a few days. This method of treatment is usually efficient where there is but little discharge, and this of a limpid and inoffensive character, and with a good constitution. In many cases, however, the discharge is so abundant that neither sealing nor the use of the coagulent will be immediately effective, but either or both together may be used, checking the flow in part at least until the disposition to discharge is relieved.

This discharge may come from a remnant of pulp in the extreme part of the canal or, in the absence of this, it may come from the irritated lining tissue just outside the apical foramen. This treatment in many cases, especially those of the more favorable kind, will be effective in arresting the discharge in twenty-four hours. Whenever this has been accomplished the canal may be promptly filled. From the pulp canals of many teeth, however, the discharge is acrid and proves a source of irritation, if promptly arrested or suddenly checked. In such cases, disinfectant or antiseptic treatment may be used in connection with partial stopping, thus rendering the discharge less offensive and less irritating to the living tissue beyond.

Pyrozone, 3 per cent. solution, may be used in such cases daily with decided benefit. After this treatment tannin and oil of cassia may be used and placed lightly in the extreme part of the canal. Solution of salicylic acid may also be used with very decided benefit. If a remnant of the pulp is found in the canal it should always be removed before the treatment suggested. It is oftentimes the case that the sudden arrest of a discharge will prove an active irritant to the tooth at the apical space and more or less

pronouncedly to the entire surrounding membrane of the root. That should in all cases where possible be avoided by the proper regulation of the treatment employed. When the discharge in such cases is arrested the canal and cavity should be properly and thoroughly filled.

I have thus far presented only the most favorable cases, in the management of pulpless teeth, emphasizing only the following points:

1. When the tooth-pulp is to be destroyed it is important to avoid any irritating or poisonous agents for this purpose. Anesthesia is in most cases required, and this is readily accomplished by injection of cocain, or by cataphoresis. In a good many cases neither of these are required, but it is insisted that all poisonous agents should be avoided.

2. The removal of débris and offensive matter from the tooth that is to be conserved should be most thorough. The utmost cleanliness and purity should be observed in every step of the work. The fluids of the mouth should be effectually excluded.

3. Excavation in the canal is made for two purposes: One to enlarge and make it more accessible in every part of the work. The other is rendered necessary where there is a decomposition taking place especially in the contents of the dentine canals. In many instances all this offensive material may in this way be removed and thus the danger of further trouble lessened.

4. The importance of arrest of the discharge that may be taking place from the pulp canal, and let it be borne in mind that this usually does not involve a prolonged treatment, the results of which are disease and oftentimes loss of the tooth. Under favorable circumstances Nature always makes rapid work in the reparation of diseased tissue. I have, however, purposely omitted the management of pulpless teeth that have involved the surrounding tissue, those in which abscesses have been formed and in which there may be diseased gums of one variety or another. These conditions may form a basis of consideration at another time.

TEMPORO-MAXILLARY ARTICULATION.

REMARKS REGARDING VARIOUS AFFECTIONS THEREOF.

Presented to the Section on Stomatology, at the Forty-ninth Annual Meeting of the American Medical Association, held at Denver, Colo., June 7-10, 1898.

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In considering the occasional remote and disastrous results of acute, sub-acute and chronic diseases of the temporo-maxillary joint, it may be well to refer briefly to the anatomy of this articulation, so as to bring plainly before us its somewhat complicated construction. The temporo-maxillary is a double arthrodial articulation, being possessed of two separate synovial membranes that normally, in very rare instances communicate with one another through an orifice in the inter-articular cartilage. Owing to this construction of the joint the movements that take place in its inferior and superior compartments are of two kinds. In its upper compartment the fibrocartilage glides forward and backward in the glenoid cavity; in the lower, the condyle rotates on a transverse axis against the fibrocartilage. When the mouth is widely opened these two movements are combined; the jaw and the fibrocartilage together move forward and rest upon the articular eminence, while at the same time the condyle revolves on the fibrocartilage. When the lower incisors are protruded beyond those of the upper jaw the movement is confined chiefly to the upper articulation; whereas the lateral or grinding movement is accomplished more largely by the lower articulation. Owing to the anatomic arrangement of this joint, we occasionally see as the result of disease in this articulation instances in which partial impairment of its movements has occurred, and in which this restricted mobility is more marked in the one than in the other of its compartments. Cases of that more distressing affection, viz., complete ankylosis of this joint, are of course much more frequently encountered by us in our practice than are those referred to above; and these would be still more frequent were it not for the anatomic construction of this joint which, by virtue of its two compartments, offers a partial barrier against its easy invasion by disease.

Any cause that may produce disease or injury in the other articulations will act with equal force upon this joint. From its more exposed position and from its occasional involvement from external ear diseases, and dental inflammations, it is more liable to be affected than are the better protected articulations. Trauma, unless it be of a slight degree, is more apt to result in complete than in partial ankylosis. Scarlet fever, diphtheria, measles, smallpox, typhoid and typhus fever, and tuberculosis are among those affections which have contributed to swell the list of cases of partial and complete ankylosis of the temporo-maxillary articulation. Rheumatic and gouty affections are much more likely to produce pain, stiffening and impairment of movement by working organic changes in one or more of the structures of the joint than to lead to complete ankylosis. Rheumatism more frequently attacks the cartilaginous and bony structures of the joint, destroying, in many instances, the fibrocartilage and frequently causing atrophy or complete absorption of the condyle and portions of the glenoid cavity. Cruveilier, who first described an example of rheumatoid arthritis of the temporo-maxillary articulation, says: "I have never seen the disease I call wearing away of the articular cartilage better marked than it was in this case. The condyle of the lower jaw did not exist. It might be supposed to have been sawn off horizontally at the line of junction of the head with the neck, and that which remained of the neck had been flattened. The articular part of the glenoid cavity was represented by a plain surface; no trace of inter-articular or cartilage of incrustation existed. Both surfaces of the altered articulation were remarkably red" (Anatom. Pathologique, liv, 9).

The opposite condition of hypertrophy as the result of rheumatism of this joint has been recorded. This hypertrophy of the condyle and neck may occur in otherwise healthy individuals and may produce sufficient displacement of the teeth so as to disarrange the normal bite. Heath, in his work on the diseases of the jaw (3d Ed., p. 420), gives an account, with illustrations, of an extreme case of this kind in which the patient had a queer, lopsided appearance of the face.

The milder result of this disease, as affecting the temporo-maxillary joint, is to produce that condition to which attention was first directed by Sir Astley

Cooper, and described by him as "sub-luxation." He held the opinion that this condition depended upon relaxation of the ligaments of the joint. Heath, however believes it is more frequently due to rheumatic changes in the articulation, and says: "the fact that these patients suffer more in damp weather and when the general health is feeble, shows that it depends upon an arthritic diathesis, and the relief that is obtained by counter-irritation and the administration of antirheumatic remedies proves that the complaint can not be due to purely mechanic causes."

Gouty affections cause more acute pain and more or less acute swelling of the joint, accompanied or preceded by gastric disturbance. Repeated attacks of this disease are apt to result in permanent impairment of this joint, by occasioning calcareous deposits among its structures, and this result is especially likely to occur in unrecognized or neglected cases of this nature.

Necrosis of the lower jaw, originating from whatever cause (with the exception of exanthematous necrosis, which is nearly always symmetric and limited to the alveolar processes), may extend from any part of the bone to the articulation and seriously interfere with its mobility or result in complete ankylosis. Other affections originating in the neighboring soft parts, as scrofulous inflammation of the face (John Howship), abscesses opening into the joint and the prolonged pressure of tumors, may each lead to partial or complete disorganization of this joint. As a case illustrating the extension of a suppurative disease of the alveolar process to the temporo-maxillary joint, I refer to the following:

On Aug. 9, 1897, I was asked by Dr. W. H. Creighton of Cincinnati to see a patient of his, Mr. B. aged 65 years, who had suffered for five months past with an affection of the left side of the lower jaw. The disease had originated in the aveolus of the first molar on the affected side, giving rise to a necrosis of this process, which had gradually extended until the entire left arch of the bone had been invaded by the disease. On several occasions during the past few months Dr. Creighton had removed a number of fragments of necrosed bone, varying in sizes. At the time I saw the patient there was considerable tumefaction of the left side of the face, which extended from the lower border of the jaw as far upward as the zygoma. The soft tissue of the neck, reaching from the mastoid process downward along the anterior border of the sternomastoid muscle, was tense from inflammatory effusion. The parts involved were exceedingly sensitive to touch. An examination of the mouth brought into view a puffy, unhealthy line of gum tissue which extended from the incisor to the post-molar region, from which pus was seen to exude from several points. A flexible silver probe was, without much difficulty, passed into one of these pus openings, upward and outward, under the massater muscle, until it reached the condyle. At various points along this sinuous course the grating sensation of disintegrating bone was plainly felt. No operation, except one to enlarge the explored sinus was recommended at this time. In addition to this, a lotion containing aconite, opium and stramonium was directed to be kept applied to the swollen cheek and neck, and the following prescription ordered:

℞ Tr. aconiti rad.	℥ss	1|9
Potass. acetatis.	℥ii	7|75
Tr. hyoscyami	℥i	3|9
Syrupi capsici	℥iii	12
Aqua q. s. ad.	℥iii	93

Misce ft. misturæ—Sig: Teaspoonful to be taken every two hours.

By this course of treatment the local swelling and pain of the parts was considerably relieved and a threatening abscess under the chin was averted. In the course of a few days the diffused swelling, as at first seen, had become localized to the immediate neighborhood of the temporo-maxillary joint, where some fluctuation could now be detected. This was relieved by the use of the hypodermic syringe, and a considerable amount of pus was removed from the joint by the aid of this instrument. The fear now was that the case would terminate in ankylosis, and the apprehension as to such an unfortunate result was enhanced when, a few days after the operation, a piece of cartilage the size of a small finger-nail was discharged from the sinus opening into the mouth. A careful examination of this specimen confirmed the belief that it was a fragment that had been cast off from the interarticular cartilage. From this time on the case progressed uneventfully and at the present writing, May 10, 1898, an unexpectedly good result has been attained. The movements of the joint are but slightly impaired. The mouth can be opened nearly to its full extent, but in doing this the jaw is pulled slightly to the affected side. The lateral or grinding movement is, however, more noticeably limited. The conclusion arrived at in this case is that the fragment of cartilage discharged came from the lower compartment of the joint.

The treatment of this case in addition to that given above, consisted in maintaining a free draining into the mouth and upon the surface. A wash for the mouth, containing permanganate of potash, was directed to be used frequently, and the sinuses were kept as far as possible in an aseptic condition by occasional injections of weak antiseptic solutions. His general condition was improved by the internal administration of small doses of tartrate of iron and potash, and Fowler's solution of arsenic given in alternate doses. Both of these remedies are known to have a constructive power in many vitiated conditions of the blood. The former acts by entering into the composition of some of the proximate principles of the blood. The latter remedy probably acts by modifying the vital conditions of its organized constituents. We know from clinical experience that these two remedies are of signal service in hastening, in many cases, the formation of healthy granulations around necrotic bones, reducing in this way to a minimum time the separation of the sequestrum, and aiding to bring many cases to a comparatively rapid cure. Owing to the somewhat unusual history and present termination of this case, it has been described in detail. The result so far appears to be an excellent illustration of a disease being limited to one compartment of the temporo-maxillary articulation, and although it is rather early to prognose as to the final outcome of the case, the conditions now are certainly favorable for a permanently good result.

The unhappy termination of comparatively slight injuries to the temporo-maxillary articulation in children can best be appreciated by bearing in mind the difference in the conditions of this joint in children and adults. Perhaps no writer has written more clearly and tersely upon this subject than has John Hilton, in his work on "Rest and Pain" (2d ed., p.

301), in which he says: "In adults the individual structures of a joint may be diseased and each may present its own local indications of special local symptoms. Thus, we may meet with isolated inflammations of the synovial membrane and ligaments, or a disease of the articular ends of bones in the adult. Now, although these structures are at all periods of life necessarily continuous with each other and closely allied in function, yet it is at the adult period, after the completion of their development, that each separate structure seems to have acquired, and thenceforward to manifest, both in health and disease, a structural independence which gives a character of individuality and isolation to the diseases of the different structures of the joint. In children all the structures of the joint must be formed, built up and nourished in concert and in due relation to each other. On this intimate sympathy existing between the different parts of a joint during childhood or during the period of growth, depends the tendency to diffuse disease contemporaneously in all the articular structures. Hence we see in our practice the quick propagation of inflammation from one articulation to another, and a rapidity of implication of the various structures of the joint which we do not observe at a later period of life."

This tendency to a rapid and complete involvement of an injured joint in children should be constantly borne in mind by the surgeon when treating any articular disease in the young. Especially should it be remembered that the discharge of pus from the ear in children is not unfrequently due to disease originating in the temporo-maxillary joint, and which is unfortumately, at times, not recognized until too late to prevent the disorganization of the articulation.

Affections of this articulation may occur at a very early period of life. Holt, in his work on "Infancy and Childhood," mentions a case of suppuration occurring in the temporo-maxillary joint at the early age of two weeks.

Acute arthritis in children is not a rare disease, and is a suppurating one from the outset. As late results there may be pathologic dislocation or a flat joint; occasionally ankylosis. An early evacuation of pus in these cases may aid them to terminate favorably, but in neglected cases complete destruction of the joint often occurs. If more attention were given to early manifestations of pain occurring in the temporo-maxillary articulation of infants and children, we would not be so frequently confronted by distressing cases of ankylosis of this joint.

Treatment.—The treatment of acute affections of the temporo-maxillary articulation should engage the early and watchful attention of the surgeon. All remedial means, local and constitutional, should be applied at once and persevered with until an obvious result has been obtained. Nor should his efforts be relaxed, neither should he become discouraged, even in those unpromising cases that apparently resist remedial measures, for by exercising patience he may bring to a successful termination a case that otherwise might result in complete ankylosis. There can be no doubt that the local abstraction of blood in acute inflammatory diseases of joints, especially when this condition is due to trauma, is one of our most potent means of preventing secondary changes in the structure of the articulations. This local depletion can be best accomplished by the liberal use of the leech. Six, twelve, twenty of these can be applied, according to the size of the affected joint and the amount of acute swelling present. For the temporo-maxillary articulation not more than four to eight are required. After their use bleeding should be encouraged by the use of hot fomentations. If leeches can not be secured, recourse can be had to the artificial leech or to the lancet. Internally, arterial sedatives should be administered. The tartrate of potash and antimony, the mercurial compounds and aconite are remedies of recognized value in these cases. The suocessful surgeon will apply the general principles of treatment to each case committed to his charge; recognizing and meeting in each instance any special condition of his patient that may, in any way, modify the local affection, whether this condition be of a temporary character or one of a constitutional nature, as a rheumatic, tubercular, malarial or a specific taint of the system. I can not refrain from again urging the decided benefits to be obtained in the cases under consideration by the local abstraction of blood in the early stages of these affections. I am confident that many joints have been preserved by this treatment that would otherwise have become useless; and I desire to enter a protest against the growing neglect of local blood-letting in acute synovitis and in other acute inflammatory affections of the articulations. In the subacute and in those cases of a more chronic nature in which complete ankylosis has not taken place, we can hope to obtain good results in most instances by the prolonged use of counter-irritants, absorbents and mechanic devices. Iodin applied externally exerts a mild counter-irritant effect and also favors absorption of fibrinous exudate. Repeated blistering is of much service in many instances.

The actual cautery, applied not directly over the joint, but in its near neighborhood, is an effective mode of treatment. Mercurial unguentums exercise a curative effect; and although they have been extensively used in chronic joint affections, they have been made of more value by the preparation of oleates of this metal, first introduced to the profession by John Marshall, surgeon of University College Hospital, London, who speaks highly of their utility in chronic inflammations when the seat of the disease is in or sufficiently near the skin. He says: "I may first mention that not only in persistent articular inflammations, but also in simple synovitis, these remedies rapidly relieve the tenderness and pain and promote the absorption of the fluid diffused into the joint. They are also of decided benefit in the rheumatic, the arthritic and the mixed forms of joint disease, but in these they do not supersede the necessity for general treatment."

He further states, that "these oleates of mercury should not be rubbed in like ordinary liniments or embrocations, but should be *merely applied with a brush or be spread lightly over the part with one finger*, otherwise they may cause cutaneous irritation or even produce a few pustules on the skin, especially in some persons." After long use of these preparations I have become more and more convinced of their great usefulness in chronic inflammations of joints.

Among the mechanic means to be employed to prevent or overcome a gradual tendency to the closure of the jaws due to disease of the temporo-maxillary joint are the various forms of shields, wedges and gags that have been from time to time devised by dental surgeons, some of which have proved of service. Among these may be specially mentioned the device

of Dr. Goodwillie of New York (*Archives of Medicine*, N. Y., June 1881), who, writing of chronic cases of inflammation of the temporo-maxillary joint, says; "The method that I employ is as follows: In this case the patient is under the anesthetic effect of morphin and nitrous oxid. If there is any rigidity of the muscles, cautiously force open the mouth and take an impression of either the upper or lower teeth, and a rubber splint is made from the cast to cover all the teeth in one jaw. Upon the posterior part of this splint is made a prominence or fulcrum, so that when the mouth is closed the most posterior teeth close upon it while the anterior teeth are left free. The next step is to take a plaster of Paris impression of the chin and from this to make a splint. On each side of this splint is made a place for fastening elastic strips that pass up on each side of the head to a close-fitting skull cap. When this appliance is in place and the elastic straps tightened so as to lift the chin, then pressure is brought to bear on the fulcrum at the posterior molar tooth; and so by these means extension is made at the joint and the inflamed surfaces within the joint are relieved from pressure; then immediate relief is experienced."

This method is an admirable one and is based upon sound surgical principles, for it secures to an inflamed part, rest, which is a condition so essential to be obtained during the process of repair.

In cases which have terminated in complete ankylosis, operative treatment is the only way to insure relief. In some few cases of fibrinous ankylosis, if a diagnosis can be made, it is practical to attempt the division of the fibrinous bands, and after this to make use of mechanic appliances in the effort to restore the mobility of the joint.

Mr. Spauton of Harley (London *Lancet*, April 16, 1881) publishes two cases of fibrinous ankylosis of the temporo-maxillary articulation, in both of which he proved the correctness of his diagnosis by dividing the fibrous bands with a tenotome passed into the articulation. The patients were girls aged 9 and 10 respectively, and in both cases the disease of the temporo-maxillary joint had followed scarlet fever. Other surgeons have also reported instances of the same character.

It is difficult to make a diagnosis of fibrinous from bony ankylosis, but in a doubtful case the surgeon, before attempting a more serious operation, would be justified in using the tenotome to sever the fibrinous bands, and if successful in this to forcibly open the mouth and effect a cure by these methods. In all cases, however, of bony ankylosis the only relief to be obtained is by an operation upon the bone itself, either by resection of the condyle or by Esmarch's operation. The first operation for the removal of the condyle was by Professor Humphrey of Cambridge (*Association Medical Journal*, London, 1856), and was undertaken for chronic rheumatic arthritis. Since that time resection of the condyle has been performed by many surgeons and the operation has been generally adopted. This operation usually affords relief, provided the entering condlye be removed. A mere section of the neck or a partial removal of the condyle has proved to be inadequate. The operation is usually unattended with danger to life, but occasionally fatal results ensue, as in the following case: Miss M., at the age of 4 years, fell from a porch, striking upon her chin. Pain and some swelling of both temporo-maxillary joints occurred shortly after the accident, followed by gradual, persistent and increasing stiffness in these joints until finally, some nine months after the receipt of the injury, complete ankylosis of the jaw became established. At the age of 19 years she was brought to me by Dr C. A. Schuchardt of Cincinnati, as a patient for the Ohio College of Dental Surgery. Her appearance at this time was the usual one presented by the unfortunate subject of early and complete ankylosis of the temporo-maxillary joints. The marked dwarfishness of the chin, owing to arrested development, was as marked as in any case under my observation, but she had experienced much less pain and there was less irregularity and mal-position of the teeth then is usual in these cases. Her desire for an operation was mainly due to the fact that I had relieved a friend of hers who had been similarly afflicted from infancy and to whom I had given relief by performing a double Esmarch operation.

After an examination of the patient it was decided to resect the condyle, and she was placed in the Good Samaritan Hospital of this city, and the left condyle being the more enlarged was selected for the first operation. This condyle, which appeared to have become a part of the glenoid cavity, so firmly was it blended with the temporal bone, was removed in pieces, Three days after the operation the patient was in good condition and hopeful spirits. She said: "I felt my jaw move on the other side." On the fourth day, however, a secondary hemorrhage occurred. This was controlled by a gauze compress. Unfortunately, however, septic infection of a virulent form invaded the wound and shortly occasioned an anarteritis that extended rapidly along the external carotid artery, which probably had been injured during the operation. A malignant cellulitis of the adjoining parts occurred and death resulted on the twelfth day after the operation.

ONLY A BABY TOOTH.

Presented to the Section on Stomatology, at the Forty-ninth Annual Meeting of the American Medical Association, held at Denver, Colo., July 7-10, 1898.

BY W. H. HALL, M.D.
MANSFIELD, OHIO.

Reference is not here made to any particular baby tooth, nor to any particular baby's tooth, but only to the deciduous or temporary teeth as a class. Interest in the subject which furnishes the topic of this treatise antedates, considerably, the discovery of the *first* baby's *first* tooth by the proud new parents. Its importance does not begin nor end here, nor is it confined within the limits of baby's and childhood's tender years, as we expect to prove. An extended theoretic discussion of the proper treatment and best material for filling roots and crown of a devitalized molar would come as far short of interesting our medical brethren as would a learned paper on typhoid fever and its treatment the dental Section of this assembly, therefore, this homely topic shall be given a plain, practical but limited consideration.

"Only a baby tooth" is expressive of insignificance, but not in that sense do we use it here, now, and elsewhere never. It is sometimes given professional utterance in just that sentiment, however, but no one in this body of our professions' representatives was ever guilty. The culprit lives and practices over in the next county and never attends a meeting of the city, county, State or National Medical or Dental

Society. He stays at home, hoping to capture patients, while the up-to-date brother attends the convention feasts. He has no need of the society, and vice versa. Did you never hear of his saying: "Oh, its only a baby tooth. We'll pull it out and some day a new tooth will grow in and takes its place?" Why not say: "Only a 'kid,' and its not important what kind of treatment is given." In my imagination I can almost see the dim outlines of a gallows rising to receive such criminals in practice. Perhaps if outraged nature fails to fill the vacancy this culprit has made, he can supply the loss with a lovely glistening gold tooth, for nowadays you can get a gold tooth, whether or not you stick your tongue in the vacancy, and for five dollars too, but then Dr. R. says they are brass, and gold plated.

I would not wish to convey the idea that I think temporary teeth should never be extracted. Not extraction but *premature* extraction is the criminal act. I rather enjoyed the enviable reputation gained in my practice in Ohio, of "never extracting children's teeth." This, however, was the frequent parental decision, but in practice was not adhered to when judgment dictated otherwise. It always takes more time to explain to a parent or accompanying guardian why an aching tooth should not be at once removed, than to perform a dozen such surgical operations, with the apparent result, after all, that the effort was "Love's labor lost." The impression which prevails to a great extent among parents, that the temporary teeth have no roots, and should be extracted when they ache, because a new one will come in after a while, any how, is an error that should be corrected as speedily as possible. The mission of the physician and the dentist is not of a remedial character alone but prophylactic and educational also. The value of the temporary organ and its important offices during that comparatively short period, the few years of child-life, should be an oft-repeated lesson, until parents are impressed with their responsibility, and that the period of first dentition, the care and attention necessary for their preservation until nature's physiologic process accomplishes their removal, is one of great importance.

A neglected, abused or maltreated first dentition, often causes sad disfigurement of the permanent set. A premature removal of the temporary teeth is a more frequent cause of irregularity in the permanent set than a tardy removal. This is a valuable lesson the dental profession is teaching, and we are persuaded that it is not altogether in vain. Because a temporary tooth aches, it must not be concluded that extraction is the only treatment, nor simply because its "only a baby tooth," that it is not worth while to give it any other consideration. True, it is much easier for the operator to extract it than to give it treatment, and parents think only of such prompt and heroic measures as will end the ache at once and forever. How sad that prevention was not thought of months, yes, even years before. The family physician is often sought in such cases, and yields to the desire for extraction, thereby doing violence, perhaps, to his conscience and better judgment. The conscientious dentist (and physician) will not only protest against premature extraction, but will follow his protest with a kind and intelligent explanation of the proper treatment, with good reasons therefor, and then, if necessary, positively decline to be a party to the "slaughter of the innocents."

The preservation of the temporary teeth is important for several reasons.

1. They are needed for masticating purposes, and must be kept in good condition for the proper performance of that function. If badly decayed, mastication can not be properly performed, and indigestion and dyspepsia result, with consequent general systemic disorder.

2. They contaminate the breath, and this fetor enters the lungs; the vitiated saliva mixed with the food, passes into the stomach; such conditions we contemplate with disgust and horror.

3. Decay involves the pulp, causing pain and suffering to the child, with more or less general nervous disturbance; finally death of the pulp, resulting sooner or later in suppuration, adding another objectionable element to the contents of the stomach. The death of the pulp portends further trouble in the future because the physiologic process of resorption of the roots ceases, and these roots, minus crowns, sometimes remain for several years, deflecting the permanent teeth from their course, or crowding them from their position in the arch.

4. The temporary teeth retain the fullness of the alveolar process and maxillary development.

5. They are needed as wedges to support and retain in its own place each contiguous tooth until the approach of the teeth of replacement.

The evils of a premature extraction of the temporary teeth are; 1, a possible irregularity of the permanent teeth; 2, absorption of the alveolar process and consequent contracted condition of the maxilla by reason of arrested development, thus permitting the contiguous teeth to move toward one another, closing the space, resulting in disalignment, impaction, or prevention of eruption of the permanent tooth. Especially important is the second or posterior temporary molar in retaining the first permanent molar in its place, and also the temporary cuspids in retaining the permanent bicuspids in their places. The premature loss of the temporary cuspid is perhaps the more frequent cause of disfigurement and a more serious irregularity than any other with which the dentist has any experience. Finally, premature extraction may cause the destruction of the germ of the permanent tooth. For example, the pulps of the *first* and *second* bicuspids are formed about the fifth or sixth years, so a removal of the anterior or posterior molars, at this period, may result in the serious injury of the permanent tooth.

What, then shall be done for the children and their deciduous teeth? No single, definite plan or course can be pursued and attain the object sought, viz., the preservation of these teeth until the proper time for their removal by nature's process and with the assistance of dental science. Several things are essential, viz., to assist weak nature if her resources are impoverished, restrain her if she seems violent, and correct her if her course be erratic. Hygienic science is well recognized as an essential factor in the health of the body, and dental hygiene is the key which will unlock the door to the temple of health science for the benefit of baby's "first teeth." Without this aid, the man of dental science is waging a stubborn and endless battle in the effort to *preserve* what might have been *prevented*. It is not by good guessing that our profession has arrived at an understanding of these things, but by the sure findings of scientific investigation. Our thought is not so much of hygienic influences

and the benefit of these dental organs, after their "line up" in the mouth, but of the importance and value of such treatment during the periods of gestation and lactation, and later periods of development.

It is not my purpose to consider in detail that strange and interesting operation in the human economy, the process of the development of the teeth, but when we know that the evidence of a germ, which eventually becomes a tooth, has been observed as early as the sixth week of embryonic life, with a knowledge also of the various stages and changes during the periods of development, we may reasonably expect that the influence of hygienic treatment, during those periods, will be manifested in a better quality of tooth structure. The papillæ or dental germs of the temporary teeth, appear, as reported by various authorities, about as follows: The anterior molars, sixth to seventh week of embryonic life, followed by the cuspids, incisors and posterior molars up to the tenth week. The eruption of these teeth occurs as follows, beginning with the incisors at about seven months of age, continuing with the entire set until the twenty-fourth month, when the posterior molars appear. Therefore, from the sixth week of embryonic life, when the dental germ is first discovered, until past two years of age, when the last temporary molar is in its place, embraces a period of about three years, during which time the temporary teeth are undergoing the developing and calcifying or dentinifying process. Any diseased condition of the system which disturbs nutrition, affecting or preventing the assimilation and appropriation of the lime salts, those elements which build the osseous system, will produce manifest defects in those tissues. As we nourish the bodies so we can nourish the teeth. Therefore let parents, physicians and dentists take more interest in this subject and study for the preservation of the temporary teeth by a hygienic régime, which tends toward the prevention of a low grade of tooth structure.

Here the physician's opportunity exceeds that of the dentist, but when the time and opportunity for the practice of these principles has passed, so far as benefit to the temporary teeth is concerned, then as cavities of decay appear they should be filled. It may be necessary to perform this operation as early as 2 or 3 years of age, but parents should understand the wisdom and value of this procedure. The selection of the kind of material for filling is governed by circumstances, but oxyphosphate of zinc or tin are generally preferred.

In conclusion, we hope that an appreciative public will more and more come to understand that not every practitioner of dental science and art is living simply to "pull" and "plug" teeth; and further that members of our profession will feel that dental instruction and education should not be entirely confined within the walls of our professional schools.

711 Seventeenth Street.

SOME FACIAL DEFORMITIES—PREVENTION.

Presented to the Section on Stomatology, at the Forty-ninth Annual Meeting of the American Medical Association, held at Denver, Colo., June 7-10, 1898.

BY A. E, BALDWIN, M.D., LL.B., D.D.S.

CHICAGO.

Some may think the presentation of this subject from this standpoint is emphasizing the importance of trivial things, but a few minutes spent in considering it will be minutes well spent for the integrity and symmetry in the development of the lower part of the faces of those entrusted to our care.

We seldom see a perfectly developed human frame, or a frame entirely free from deformity, and this truth is even more true of the face than of almost any other part of the frame. I have for years had a good opportunity to observe the mouth and jaws, and to some it may come as a surprise that it is a very rare thing to find a person the two sides of whose jaws, either upper or lower, are alike. We all know that in the growth or development of the child into the adult the head as a whole grows much less than the body or extremities, but the growth of the jaw in the normal person is very great, even at the age of 2 or 3 years, and with the full complement of twenty deciduous or milk teeth, the jaws are abnormally small for the proper contour of the bony lines of the face. But this lack of contour is not noticeable, for the face of the little child is, by the deposit of soft tissues, kept in the dumpling shape. As the child approaches adult life and nature enlarges the jaw, the soft tissue is resorbed and the bony outline appears more distinctly, either normal or abnormal in size, making the perfect or deformed face, as the case may be.

You are all aware that at about the sixth year the jaw is surprised by the appearance (at the rear of each of the second deciduous molars), through the gums of the largest, strongest and best-rooted teeth that are given to man, the first permanent or sixth-year molars, and coming in as they do, they act as abutments for the anterior arch in its development, as in the jaw between these two points must, in a few years (four to seven) appear ten teeth of nearly double the size of the teeth to be replaced. Speaking in a very conservative way, at least three-fifths more space is needed for the regular eruption of these ten permanent teeth than was needed by the deciduous. These abutment teeth, so deeply and strongly set in the jaw, are so placed that they can hardly be moved back by any force applied, and it is evident that nature thus wisely provided that no infringement should be made upon the space to be developed in the rear of these teeth, to be occupied by the second and third molar teeth. So you see that to provide for the occupancy in the jaw of the permanent anterior teeth, the jaw must expand; and doubtless it has been a matter of common observation to you all, that the newly erupted permanent central incisors appear surprisingly large, as compared with the old, being formed to fit the face of years to come, and as a matter of course, these teeth appear crowded and are quite irregular, often overlapping or turned edgewise.

Some notable exceptions are noticed in cases where prior to the eruption of the permanent teeth, you may notice that the deciduous teeth which previously were close together, now at the fourth, fifth or sixth year, are moving apart, so that the spaces are noticeable and marked. This, when it occurs, is the result of the new wide teeth approaching the surface directly side by side, and they are already getting in their work of spreading the arch. In these cases of the teeth coming in overlapping or crooked, you are often importuned by friends who call upon you to help the children to regular teeth by extracting the teeth on either side to allow them to come down "regularly," as they say, and but for the thoughtlessness or carelessness of many medical attendants indulging these

importuning parents, this paper would hardly have been written, for following the thought of the paper you will see that in the effort to relieve the child you have curbed the expansion of the jaw by removing one of the causes. This expansion is most largely brought about by the expanding pressure of the incoming larger teeth.

Right here is as good a place to present to you a rule, almost without an exception, which is of the greatest importance to you in serving the best interests of your little patients, viz., *never extract or recommend the extraction of any deciduous tooth save to make way for the permanent tooth which is to take its place.* By closely adhering to this rule you will always utilize the forces of nature to produce the necessary expansion of the jaw to the natural conformity of the face. To illustrate this further and to further emphasize this rule, we will take a case of incoming permanent central incisors. In this illustrative case they are so crowded that they overlap very much and the thoughtless physician, in his supposed kindness to the patient has removed the deciduous laterals under the careless supposition that it was necessary. In this case the teeth will straighten very quickly, but instead of the expansion of the jaw, which would have taken place were the laterals left, the jaw will expand very little if at all, so the deformity of the face will be marked when the teeth are all erupted.

While on this subject it will not be amiss to speak, if only incidentally, of the necessity of caring for and preserving the temporary molars, not only for the purpose of preserving the space for the incoming bicuspids or premolars, by which they are replaced about the eleventh or twelfth year, but also for hygienic reasons; and notably among them may be mentioned the fact that the child, up to the eruption of the bicuspids needs a perfect masticatory apparatus, even more than the adult, for in the adult the masticatory apparatus need only be used enough to produce, for the system, pabulum enough to furnish nourishment to make up for the daily waste in the tissue, and in the child, while the waste, which is greater than in the adult, must be replaced, there must also be nourishment provided for the development or growth of all the organs of the expanding and rapidly-growing physical frame. Still another reason for bestowing much care on these teeth is that the child is forming habits for life, and if his teeth are neglected so as to become sore or painfully sensitive to mastication, the child will only masticate enough to enable him to swallow the bolus, thus so imperfectly divided, in this way way not only forming the habit (too prevalent with Americans, young and old) of "bolting" the food, but also, which is even more serious, paving the way for all the ills, nervous and otherwise, that come from an overloaded and overworked stomach.

The writer does not claim that all the deformities of the lower part of the face can thus be prevented, for there are also the very powerful factors of inheritance to be taken into account, but a proper heeding of these matters by the medical adviser will result in a great lessening of such deformities and incidentally of improving the health and nourishment of the patient while young and reaching far into age as well.

Some may say that it is improbable that such slight force as the incoming tooth may exert would produce such expansion as occurs in the bony expansion or development of the jaw. It is only necessary to say to such that in all nature it is seen that the feeble though constant force is much the most powerful source in changing from the normal to the abnormal or in the growth and development in the normal. These illustrations in nature are on every hand, and much easier understood than can be that of the elongation of the long bones of the leg, which lengthening occurs by deposit between the shaft and the articulating surfaces.

In the short time at our disposal, it is not possible to go into anything but generalities, and this short paper has subserved its purpose if it results in the medical profession guarding with much more care the temporary teeth of the little ones, as to the care to be bestowed upon them in keeping healthy and in seeing that they are retained until the new tooth which is to replace it, asks for the position.

SOCIETY PROCEEDINGS.

Chicago Medical Society.

Regular Meeting, Dec. 14, 1898.

Dr. ARTHUR D. BEVAN, the president of the society, occupied the chair.

Dr. ROBERT B. PREBLE contributed a short paper on

AMEBIC DYSENTERY IN CHICAGO.

He said that amebic dysentery is not so very uncommon in Chicago, but the great majority of the cases are imported, so that the two following cases are of interest because they were acquired in this city. He finds by inquiry that a few physicians have observed cases acquired here, but none of the cases have been placed on record.

J. K., 30 years of age, American, resident in Chicago for nine years, for the past fourteen months has had diarrhea, with blood and mucus in the stools, moderate tenesmus, and abdominal pain. Ameba coli were found in large numbers. Improvement, but not recovery, followed colonic flushings of quinin and of silver nitrate.

Mrs. C., aged 50 years, Irish, resident in Chicago for thirty years, had diarrhea with blood, mucus and pus, during the summers of 1897 and 1898; ameba in the stools; not yet under treatment.

Dr. HENRY GRADLE read a paper entitled

THE OPERATION FOR ADENOID GROWTHS IN THE PHARYNX,

and exhibited a new instrument. He said that while it is generally acknowledged that the thorough removal of adenoid vegetations from the pharynx is one of the most satisfactory of surgical procedures, the technic of this operation is not as yet as satisfactory as its results. All operations, whether done with the curette, Gottstein's ring curette, forceps or snare, have some drawbacks. The most serious consideration is that it is difficult to remove the adenoid tissue radically. Undoubtedly most operators do most of their operations thoroughly, but it is impossible to be sure of this at the time of the operation. With the finger it is impossible to tell accurately whether all the lymphatic tissue has been removed. When we examine with the postnasal mirror, children who are tolerant, we find that almost as a rule remnants of the tonsil have been left and in a small minority of cases these remnants are of sufficient size to be of importance. On account of the peculiar shape of the space in which we operate, every instrument is liable to slip to some extent, leaving fragments of the tonsil. Nevertheless, most operations give satisfactory results in the end, but the more radical the extirpation, the more complete and the more prompt are its beneficial effects. Moreover, adenoid remnants may give rise to recurrences. Bliss (*N. Y. Med. Jour.*, Oct. 29, 1898) has lately called attention to the frequency of recurrences, and found that they were favored by under development of the faucial region, vascularity of the growths and strumous condition of the patient. Dr. Gradle's own experience agrees with this. He has seen three recurrences among patients operated on by himself, and about a dozen in children previously operated upon by other competent surgeons.

All operations are apt to be bloody. When the soft vegetations can be cleaned out with a single sweep of the Gottstein curette, the bleeding is often insignificant, but if any instrument has to be reintroduced, as is almost always the case, a hemorrhage up to 100 grams or more is not uncommon. Bleed-

ing is most copious from the use of the Trautmann sharp spoon, and least so from the cold snare. The latter instrument with straight canula, he has often used to advantage in removing remnants, especially when the mirror is tolerated. It is not very painful, but not a quick way of working. He thinks it is not commonly known that persistent hemorrhage after the operation is nearly always due to partly detached fragments of tonsillar tissue, and that the easiest way of stopping it is to search for these fragments with the finger, or by inspection with forcible elevation of the soft palate, and to remove them with forceps or snare.

Finally, it must be admitted that all the operations requiring repeated introduction of the instrument are relatively formidable without necrosis.

The instrument he presented does the operation more radically, quicker, and with less bleeding than any other which he has previously used. It is a guillotine, the fenestrum and knife of which are curved to adapt themselves to the slope of the roof and posterior wall of the pharynx. While experimenting with this mechanism he learned that the idea had previously been applied by Schuetz, to whom he accords the priority and credit, although his instrument has not received much notice in literature. In his (Dr. Gradle's) instrument, the knife is retracted by the mechanism of the Wright snare, which he finds is a distinct advantage over the straight handle and slide of the Schuetz adenotone. The cutting end is 20 mm. wide (knife 17 mm.) and the sweep of the knife is 25 mm. The instrument can be inserted in children over about three years of age, without difficulty, especially when held obliquely, on account of large faucial tonsils. The main point is that it must be well and forcibly pressed upward and backward before the knife is withdrawn. The detached tonsil usually lies in the concavity of the blade on withdrawal, or is spit out by the patient. Once he has known it to be swallowed. If the instrument is well pushed against the base of the tonsil it cuts off all the adenoid tissue in one sweep. In illustration he passed around a number of entire pharyngeal tonsils thus removed. The slip, which is apt to occur with the Gottstein curette, is prevented by the use of sufficient force with the guillotine, hence he claims for it the certainty of radical results in every case when properly used. Its use has been followed by less hemorrhage on the average than he has previously experienced in similar cases, and he has now used it some fifteen times. The speedier cessation of bleeding is undoubtedly due to the clean cut.

As the surgeon can do a quicker, neater, and he thinks he can safely say, a less painful operation by means of this guillotine than with other instruments, its use will serve to lessen the number of narcoses. An experience of nearly 800 operations, of which less than 50 were done under narcosis, has convinced him that general anesthesia is undesirable in the removal of adenoids. The bleeding is greater with the pendant head, and this, together with the possible aspiration of blood or fragments, interferes as much or more with leisurely work, as the fright and pain of the conscious child. Incomplete anesthesia and erect posture obviate these annoyances, but this is not any more humane than rational treatment of the conscious patient, besides adding some danger.

In a recent article, F. W. Hinkel (American Laryngological Association, 1898, and *N. Y. Med. Jour.*, Oct. 29, 1898) has shown that the danger of chloroform is greater statistically in this operation than in general surgery. He has collected the reports of eighteen deaths under chloroform from English and American sources since 1892. This seems truly an appalling number, especially occurring in an operation otherwise absolutely safe and with no vital indication, and particularly in children, who stand anesthesia better than adults. He attributes the special danger to the frequent existence of a large thymus gland in children with adenoids, the so-called habitus lymphaticus of the German pathologists, a condition known to predispose to sudden death from apparently trivial causes. While it has been his good fortune never to have seen an accident in his experience, he has always felt that anesthesia, when demanded by the parents, or necessitated by the unruliness of the patient, adds an unnecessary element of danger to the operation. The majority of the patients which he has seen with recurrences, including his own cases, had been operated on the first time under anesthesia (vide JOURNAL, Nov. 12, 1898, p. 1191, and Nov. 26, 1898, p. 1310).

Clinical Meeting held December 21.

Dr. HENRY B. FAVILL officiated as chairman of the meeting.

Dr. JACOB FRANK exhibited a patient upon whom he had performed a laminectomy. He also showed a case of Steno's fistula.

Dr. HUGH T. PATRICK demonstrated "The Sheet Rub," and exhibited patients.

Dr. ARTHUR R. REYNOLDS addressed the Society on the prevention of tuberculosis and the feasibility of organizing an association for this purpose, the membership of which shall consist of ordinary and life members. *Methods:* The education of public opinion and the stimulation of individual initiative by means of a central bureau for the collection and distribution of information as to modes of diffusion of tuberculosis and measures of prevention; the circulation of pamphlets and leaflets setting forth in plain language the results of scientific investigation of the above points; public lectures by men approved by the Society; addresses at congresses and other public gatherings; co-operation with other societies having for their object the promotion of public health; the co-operation of the public press; the holding of periodic congresses, and the issuance of an annual report; the promotion of the establishment on a self-supporting basis of open air sanatoria for tuberculous patients; the influencing of legislatures, county and city councils, and other public authorities on matters relating to the prevention of tuberculosis.

A motion was made that the president of the Chicago Medical Society appoint a committee to consider the practicability of forming such an association with a view to carrying out the suggestions presented by Dr. Reynolds.

Dr. E. J. MELLISH presented a paper entitled

CLINICAL HISTORY OF A CASE OF EPENDYMAL CYST OF THE CEREBELLUM.

Since the greatest interest connected with the case centers in the pathology, he made the clinical report brief, and refrained from lengthy discussion of the symptomatology of intracranial tumor. Stated briefly, the usual symptoms of intracranial tumor are: 1. Headache and pain, which are rarely absent, are usually constant with paroxysmal excerbations, but may be intermittent and either general or local. 2. Optic neuritis, present in more than three-fourths of the cases, regardless of the seat of the tumor. 3. Vomiting, a common effect of tumor anywhere, but most apt to occur in tumor of the medulla, middle lobe of the cerebellum and corpora quadrigemina, cerebellum and middle cerebellar peduncle. 5. Convulsions, general and local. Brief tetanic rigidity with retraction of the head has been observed in cases of cerebellar tumor (Gowers). 6. Sensory symptoms, as paresis, paralysis, anesthesia, deafness, etc. 7. Mental disturbances and derangements of speech. 8. Stupor and coma, common as terminal phenomena.

The chief points of interest in the clinical history of this case are that they were able to make a reasonably positive diagnosis several months before the fatal termination, and that the diagnosis was based very largely upon negative symptoms.

The patient was a girl, aged 7 years, of good family history—brothers and sisters, parents and grandparents, all living and healthy, with no evidence of venereal disease in the family. This child seemed less rugged than her four brothers and sisters—less resistant to disease. During gestation with this child the mother suffered from sunstroke. At the age of $2\frac{1}{2}$ years she was ill five weeks; at $3\frac{1}{2}$ years one week, and at $4\frac{1}{2}$ years two weeks with gastro-intestinal trouble accompanied by fever. His acquaintance with the patient began at the time of the last mentioned illness. He observed no special sign of intracranial disease, but recalls that she had severe headache, which he attributed to febrile action. The next time she came under his observation was on an abnormally warm day, about Oct. 1, 1897, when she was 6 years old. She had been running and playing violently, and appeared to be overcome by heat. The presence of severe headache, cardiac depression, and other symptoms, led him to treat the case as one of mild sunstroke. While the symptoms of depression yielded promptly, the headache persisted, and after two days she had paroxysmal pain, somewhat intensified in the suboccipital region, together with retraction of the head. The temperature ranged between normal and 100 degrees F. Under treatment suitable for meningeal irritation or subacute meningitis, the symptoms subsided within a few days. After the acute symptoms had vanished, the mercurial and iodid treatment was instituted, for possible syphilitic disease. For seven weeks she had no further trouble, save paronychia of several fingers, which, however, yielded to simple antiseptic treatment and was not considered as either tubercular or syphilitic. Then recurred violent paroxysmal headache, even more severe than that of the first attack, together with pain somewhat localized in the suboccipital region and extending down the back of the neck. During the paroxysms of pain there was frequent retraction of the head with brief tetanic rigidity of the whole body.

These paroxysms of headache usually lasted several hours, but the intense pains were momentary, or, at least, of short duration. There was slight photophobia. The temperature was usually normal and never above 99.5 degrees F., during this exacerbation. The pulse was about normal in frequency and rythm, tongue coated and bowels constipated. The active symptoms subsided within ten days.

At this time Dr. R. B. Preble saw the case with him and made careful neurologic investigations. The eyes were examided under a mydriatic, and they found a portion of each disc at the border less clearly defined than normally—slightly choked. Ophthalmoscopic examinations made on three or four different days yielded the same result. There was no disturbance of the functions of the cranial nerves or spinal cord. The patient's condition of lowered vitality was no more than might be attributed to decreased ingestion of nutriment during the periods of suffering.

These were all the positive symptoms observed in the case up to December, 1897. On these findings, and by exclusion, the diagnosis was based, which was intracranial tumor of undeterminable character and location. He had previously observed several cases presenting a similar symptom-complex in which tumors were located beneath the tentorium. In the belief that he possibly had to deal with gumma, the mixed treatment was continued, and during the next four or five weeks, or until January, 1898, she progressed favorably. She then passed from his notice until Sept. 21, 1898, the day before her death. She was in a condition of stupor during the last two or three days before her death and subject to frequent tetanic convulsions. The mother states that from January on the child had an exacerbation once every two to four weeks, with the symptoms gradually increasing in severity. The only new symptoms observed by her were partial amblyopia and progressive muscular weakness present during the last few weeks.

A few words as to the basis of diagnosis. It was considered that the diagnosis lay between tubercular meningitis, intracranial abscess and tumor. The two former were excluded on account of the chronicity of the disease and the absence of the forerunners and prodromes of these affections. Besides, the clinical picture was almost wholly at variance with what is usually seen in tubercular meningitis and abscess.

The autopsy was made by Dr. Preble and himself and was confined to the cranium. The membranes and entire surface of the brain seemed perfectly normal and the ventricles contained the normal amount of fluid. In short, nothing pathologic was encountered until they came to the cerebellum, and here the tumor was discovered in the middle lobe. The cerebellum and medulla were transferred to Dr. Herzog, who will make the pathologic report.

Dr. MAXIMILIAN HERZOG then made the following report of

A PECULIAR EPENDYMAL CYST OF THE CEREBELLUM, WITH SOME REMARKS CONCERNING THE NEUROGLIA.

Attention has been called by several writers to the fact that the ependymal epithelium lining the central canal of the cord and the ventricles of the brain may, under certain conditions, undergo extensive changes of a proliferative type. Von Kahlden, like Stieda, whom he quotes in his article, has seen proliferative changes in the ependymal epithelium in consequence of the presence of cysticercus cellulosa. Of more moment, however, than such secondary and relatively unimportant changes are primary proliferative processes occurring in the ependyma. Stroebe, who in gliomata saw cavities lined with epithelium, which he takes to be embryonic inclusions (diverticula from the original neural canal), is of the opinion that such inclusions are the essential cause of the formation of gliomatous tumors.

Leaving glioma out of consideration, the histogenesis and etiology of which are by no means settled, there remain in the central nervous system at least two forms of tumors, the origin of which from ectodermal embryonic inclusions appears to be beyond doubt, the dermoid and the cholesteatoma. That the latter are derivatives of the ectoderm and not, as some have believed, endotheliomata, is strongly suggested by the fact, quoted by Oppenheim, that in some cases little hairs were found included in the epithelial pearls of the cholesteatoma.

It may appear somewhat strange to speak first of proliferative processes of the ependymal epithelium of the central canal and the ventricles, and then couple with these considerations the origin of dermoids and cholesteatoma of the central nervous system. It should, however, not be forgotten that there are concerned in all three cases proliferative processes of structures primarily derived from tissues of absolutely the same histogenetic origin. Only after the epithelial cells of the ectoderm have been well differentiated as such, are formed the medullary plate and later the medullary groove. The latter is first lined by epithelial cells (as Dr. Herzog himself has been able to observe in the chick embryo, the sheep embryo, and in one very young human embryo 2.5 mm. long with the neural canal still partly open), which have exactly the same character as the other epithelial cells of the ectoderm, which later on give rise to the epidermis, its hirsute appendages, and its glandular apparatus. These points are emphasized here, because the epithelial cyst to be described presently presents some features which might easily induce one on superficial examination to classify it as a dermoid which, in his opinion, it is not at all. He believes it to be a formation originating from the epithelium of the early neural canal.

The cyst under discussion occupies the site of the vermis inferior of the cerebellum, the posterior end projecting into and partly obliterating the incissura posterior. The commissura brevis, the pyramid and the uvula of the inferior vermiform process have disappeared, as all of that structure posterior to a line drawn through the middle of the amygdalæ has become replaced by the cystic tumor. The latter has apparently displaced the postero-median parts of the hemispheres outward, so that the vallecula, instead of being a deep and comparatively narrow depression, has become a wide, shallow one. The long axis of the cyst is identic with the long axis of the furrow between the two hemispheres, and measures a little over 4 cm. Transversely the diameter of the cyst is about 3 cm., and vertically (from roof to floor) between 2 and 3 cm. At the anterior pole of the cyst its upper and lower walls are in complete juxtaposition, and they project as a solid bud or, if this term be admissible, as a solid diverticulum into the nodule—the only part of the inferior vermiform process left. The nodule is practically intact, and consequently the cyst has no connection with the fourth ventricle. In growing, the cystic tumor has found room for its enlargement more by pushing aside and compressing than by directly destroying or replacing normal tissues. The posterior part of the inferior vermis has almost entirely disappeared, while the superior vermis is almost intact, and the gray matter of the hemispheres, the central stem of white matter, the corpus dentatum, and the nucleus tacti are macroscopically normal.

The cyst wall consists of a whitish, somewhat shiny tissue, which is composed of thin scaly lamellæ which can be separated into still thinner flakes and also teased into fine, long fibers. When first examined by the writer, the cyst had ruptured and discharged an abundant amount of the scaly masses first mentioned. The rupture had occurred in the lower wall, which at the point of rupture was as thin as brown paper and appeared covered only by a very thin film of soft granular, disintegrated gray matter. To all appearances, the rupture was an artefact produced during the removal of the brain.

Microscopic examination.—Pieces from the cyst wall, including the neighboring cerebellar tissue, were hardened in a mixture of Mueller's fluid and formalin, embedded, sectioned and examined with various stains. At the point near the anterior pole, where the cyst projects into the cerebellar tissue, the wall was found to be composed of the following elements: The inner cyst wall proper is formed by several layers of cuboidal epithelium. Next to this, i. e., external to it, is a tissue composed of cells, more or less spindle-shaped, the nuclei of which, as a rule, do not take the nuclear stain very well. In some places nuclei are almost entirely wanting, and instead of distinct cells only a granular débris is found. Here are also found some cells in appearance like polymorphonuclear leucocytes. Next to the tissue described is found a zone with cells of the character of those in the granular layer of the cerebellum, and among them a few large non-nucleated masses, which one might take for degenerated Purkinje cells. The whole of the tissue so far described, excepting, of course, the epithelial cells, creates the impression of being the degenerated remnant of the former gray matter of the vermis inferior. This gray matter had apparently, in consequence of the pressure exerted by the growing cyst, become atrophic and degenerated. Fibrous, wavy, connective tissue, poor in nuclei in some places, richer in other places, and containing blood-vessels—the pia arachnoid—separate the cyst from the gray substance of the hemispheres. This appears normal, as far as can be judged from the methods of staining employed.

Interest mainly centers upon the epithelium forming the cyst wall proper. It consists of several layers of stratified cuboidal cells. These cells are, however, regularly cuboidal only in the outermost layer. Toward the interior of the cyst they become more changed in shape and type. In some places there can be seen a light ring around the cell outlines, or rather, a light space between neighboring cells. Distinct intercellular bridges, however, cannot be made out. The changing cells do not, however, assume the type of cornifying epithelium of the epidermis or of a true typic dermoid cyst. The epithelial cells

are changed into slender bipolar fusiform cells with two long processes. While the cell as a whole is changed in type and character, its nucleus, previously round, becomes oval or more or less rod-like, and there appear in the cell protoplasm granules, highly refractive and taking up the nuclear stain. The more elongated the cell the finer are the granules, which now stain less intensely with the nuclear stain. Finally, we find long, slender, stiff fibers which contain no distinct granules. These fibers, however, retain a certain degree of affinity for the nuclear stain, which they take up in a slight homogeneous, diffuse manner. Besides the hematoxylin eosin method, several other stains were used with the following result with reference to the fibers: Picrocarmin, yellowish with a tinge of red; Van Gieson, brownish-violet reddish; Gramm, light violet. The new specific methods for staining neuroglia fibers were likewise tried. They did not furnish any satisfactory results, as was to be expected from the fact that the specimen was only obtained quite a time after postmortem.

From the results of the staining methods, we see that the fibers derived from the epithelial cells behave similarly to cornified substance, though not quite the same. A digestion test made with the scales which came out of the cyst is not free from objection, since it was only made after the scales had been in the Mueller-formalin fluid. After removal from this fluid the scales were washed three days in running water. Artificial gastric juice acting upon these scales for two days at brood oven temperature had no visible effect upon them.

He maintains that on account of its anatomic position and on account of the make-up of its wall, the cyst described can not be looked upon as a dermoid, but must be considered as a diverticulum of the fourth ventricle which had become cut off from its original place of origin. In considering the process of cornification in the epithelial cells of an ependymal cyst, he briefly referred to some embryologic and other work concerning the neuroglia in which he has been engaged for some time.

He believes with Weigert that the so-called glia fibers are something absolutely distinct from the glia cells and are not processes of the latter. However, some of the neuroglia cells certainly have protoplasmic processes. Such bipolar and unipolar glia cells occurring in gliomata have been described and pictured in an excellent paper by Taylor. Dr. Herzog has likewise found such cells in gliomata, and demonstrated them about a year and a half ago before the Chicago Pathological Society.

Concerning the embryology of the ependymal epithelium and the neuroglia, reference must be again made to what has been said at the beginning of this report. At the time when the medullary plate and the neural groove are formed, those cells which later on formed the ependymal epithelium and the neuroglia and those ectodermal cells which later on form the epidermis are absolutely alike in character. The ependymal epithelium also shows and preserves another feature which reminds one of the regeneration of the epidermal epithelium. The formation of the neuroglia takes place, at least early in embryonic life, only from the layer of ependymal epithelium lining the neural canals. In these embryologic considerations the term "neural canal" is used in the sense of the whole neural canal, and it includes what later on becomes the ventricles (ependyma) as well as the central canal of the cord. The newly-formed cells, which later on become the neuroglia cells, are pushed in a radial manner from the center toward the periphery. He has been able to observe in the young chick embryo, in the sheep embryo, and in two human embryos, the latter about four to five weeks old, obtained by hysterectomies and fixed immediately after removal, that the karyokinetic figures are all found directly around the neural canal. The formation and regeneration of the neuroglia occurs, therefore, at this place. In older chick and sheep embryos he has noticed that karyokinetic figures are also found at the opposite side, namely, at the outer surface of the central nervous system. He believes that these observations will explain the fact, brought out so prominently by Weigert recently, that in the ependyma of the ventricles and around the central canal of the cord there are always found densely packed neuroglia fibers in great abundance. Weigert further states that numerous neuroglia fibers are also found on the surface of the central nervous system. These findings may be easily explained from the study of the early embryonic formation of the neuroglia, which also explains why the glia cells in the embryo are arranged in a radial manner. The newly-formed cells in the central canal push the older ones outward toward the periphery. This is the true state of affairs, and not, as Sala y Pons (quoted from Weigert, p. 125) somewhat adventurously assumes, that the peripheral process of the ependymal cell draws the cell toward the periphery by ameboid motion.

The embryologic observations mentioned, as well as observations made in the examination of gliomata, impressed him with the idea that the neuroglia cells, like their near histogenetic relatives, the epidermic cells, in the course of time go through a process of cornification; and that from the young simple glia cell there is finally formed the differentiated glia fiber of Weigert. Gierke, who, however, still looks upon the glia fibers as cell processes, expresses the opinion that these fibers are a cornified material. It seems, however, that Gierke's view was almost forgotten until Weigert again mentioned it. The latter, however, does not believe that the glia fibers are a cornified substance. His impression that the glia cell finally becomes the glia fiber by a process of cornification, was particularly formed by considering, on the one hand, the early embryology of the ependymal epithelium and the neuroglia cells, and, on the other hand, the fact of the later existence of the distinct glia fiber. It is evident that the distinct glia fiber must in some way or other be derived from the glia cell. However, he does not wish to be understood as believing that the distinct glia fiber of Weigert in its intrinsic nature is absolutely identic with a cornified epidermal epithelial cell. What he does believe is that we are dealing with two tissues, absolutely identic in their earlier histogenetic origin, but differentiated very much, later on, *going through a final senile process, which is very much alike in both instances.*

Concerning the cyst under discussion, the claim that it originated in a diverticulum from the fourth ventricle early in embryonic life, finds very strong support in comparative embryology. Lahousse observed in the chick embryo the cerebellum is developed around a diverticulum of the fourth ventricle. Minot thinks it probable that in the mammalian embryo the cerebellum is developed in a similar manner, but that the diverticulum is obliterated by the growth of the cerebellar walls. Observations are wanting, however, as Minot states, to verify this supposition, and there is, according to Koellicker, never any large diverticulum present normally. He would have to look upon this anomaly as an atavism.

It is also interesting to note that Virchow has described a cerebellar cyst of which he says: "It (the cyst) is nothing else but a diverticulum (Ausotuelpung) of the fourth ventricle which has been transformed into a sacculated nodule." All indications, therefore, are in favor of the claim that in this case we are dealing with what was originally a diverticulum of the fourth ventricle. The epithelium lining the cyst was consequently derived from the ependymal epithelium. The latter, as well as the neuroglia derived from it, normally do not show such cornification-like processes as were found to exist in the cyst epithelium. On the contrary, we are dealing in the cyst wall with a tissue change, a metaplasia, which approaches the type of cells neither ontogenetically nor phylogenetically as highly differentiated as the ependyma and the neuroglia. Such an occurrence might properly and significantly be called an "atavistic metaplasia," and it is undoubtedly of a great deal of interest in showing us the way in which ependyma and glia may have in the course of their phylogenetic differentiation become specialized to their present type of senile changes.

It has been previously noted that the ependymal epithelium has a tendency under other pathologic conditions to behave similar to the epidermis epithelium, namely, when we have to do with cylindric cell carcinomata arising from the epithelium of the ventricles. In such tumors there have been found epithelial pearls (cornified epithelium) identic with the same structures of skin cancers. We are likewise in such a case undoubtedly dealing with an "atavistic metaplasia" of the ependymal epithelium.

In conclusion, if a hypothetic etiologic remark may be permitted the pathologist, it would be: possibly the sunstroke the mother had while pregnant may stand in some causal relation to the diverticulum formation in the embryo, and that the neoplastic, proliferative changes leading to the formation of the finally fatal cyst were started up in the embryonic inclusion by the sunstroke from which the child suffered in 1897.

Dr. Reuben Peterson, at a previous clinical meeting of the society, reported

A CASE OF EXCISION THROUGH THE ABDOMEN OF NINE INCHES OF THE RECTUM AND SIGMOID FLEXURE FOR TUBULAR STRICTURE. RECOVERY WITH PERFECT SPHINCTERIC CONTROL.

Mrs. K. R., married, aged 35 years, family history negative, no history of congenital syphilis, the menstrual periods, although painless, have never been regular, was married fourteen years ago, and three years later gave birth to a male child, which has shown no constitutional taint. No history could be obtained of acquired syphilis, gonorrheal infection, or ulcerations about the anus, or within the rectum. Since girlhood the patient had suffered from an obstinate form of constipation, evidently aggravated by neglect, as she only went to stool

at intervals of several days. Eight years ago she noticed that the fecal masses were becoming smaller and flattened. From this time up to the present she has experienced more and more difficulty in evacuating the bowel until before applying at the clinic, she had not had a passage for nearly two weeks. Of late she has had considerable discharge of pus and slime from the rectum. For the past year she has gradually been losing in flesh and strength. Examination showed the patient considerably emaciated. Heart, lungs and kidneys were normal. There were no physical characteristics of constitutional disease. A vaginal examination showed the uterus to be retroverted, and the appendages to be enlarged and adherent. Rectal examination revealed, one inch above the external sphincter, a dense tubular stricture of the rectum through which the finger could not be forced. By the vagina the thickened gut wall could be traced upward some inches, although the upper extremities of the thickened tube could not be reached. The patient was placed upon cathartics for some weeks, and the intestinal tract kept cleared as well as possible. She was admitted to the Charity Hospital, and the sigmoid flexure above the stricture was carefully cleansed by a large amount of water passed through a slender rectal tube, which could be just pushed through the stricture. Dr. J. B. Bacon kindly saw and examined the case with me, and thought that the beginning of the stricture was high enough above the sphincter to allow of a fistulous communication being made between it and the sigmoid.

The operation was performed before the class at the Post-Graduate Hospital last March. The patient was placed in the Trendelenburg position, and the adherent appendages, consisting of a hydrosalpinx on the right and a dermoid cyst on the left side, were quickly removed. Then I tried to carry out Dr. Bacon's suggestion, which, as you know, is bringing down the sigmoid and by means of the Murphy button establishing a fistulous tract between it and the portion of the gut below the stricture. In separating the vagina from the rectum, my finger slipped through the friable structure and I had an infected pelvis. There was nothing left for me but to remove the rectum through the abdomen, which I proceeded to do as quickly as possible. I tied off the superior hemorrhoidal artery below the promontory of the sacrum, thus securing a bloodless operation, the patient not losing more than a tablespoonful of blood during the rest of the operation. I incised the peritoneum on either side of the rectum and sigmoid and enucleated them until I got below the point of stricture. It was too deep down in the pelvis to do an anastomosis through the abdomen. I had the bowels protected by gauze, so I invaginated the lower portion of the gut outside of the anus and then drew down the upper portion, and did a modified Monsell operation through the anus. In other words, I had peritoneal surface against raw surface. I let the parts slip back, and after suturing these together, protected the joint by gauze packed through the abdominal incision. In spite of the length of the operation, two and one-half hours, the patient had no shock, for the reason that she did not lose blood. I had infected the pelvis, and upon withdrawal of the gauze on the third or fourth day, there was a high temperature and a recto-abdominal fistula resulted. This gradually closed, until now there is only a small opening through the abdominal wall, which causes her very little inconvenience and is healing.

The interesting points in regard to the case are the removal of the rectum through the abdomen and the preservation of the sphincter. She has perfect sphincteric control. Just at the point of union of the two ends of the gut there is a slight stricture, admitting, however, the passage of the forefinger with ease. Her bowels move every day, she has gained sixty pounds in weight, and considers herself a well woman.

It is too late to go into the objections to the operation, or to bring up points in its favor, but whatever may be said in regard to the radical excision of rectal strictures, certainly in a case of tubular stricture of such extent as this, we are justified in excising it radically, because we transfer a stricture which extends over a distance of eight inches into an inferior stricture which can be readily dilated and controlled. I think if sepsis could be prevented and we could get complete union of the gut, there would be very little stricture remaining in these cases. I let the bowel slip back after I had made anastomosis outside of the anus. That, I believe, was a mistake, and is too dangerous to repeat, because we have a peritoneal surface coming against a raw surface, and union does not take place so readily as where two peritoneal surfaces come together. In another case I would hold both ends outside by sutures until the latter cut through and allowed the gut to gradually slip back within the pelvis. I have experimented on a number of cadavers and have found that when you cut the mesosigmoid and mesorectum, the lower portion of the sigmoid can readily be brought down through the anus. The operation is exceedingly easy when done through the abdomen; when done through the bowel, or by the Kraske operation, it is exceedingly bloody, and the shock to the patient is considerable.

At some future time I shall present at more length the results of my experiments on the cadaver.

San Francisco Eye, Ear, Nose and Throat Surgeons.

December Meeting.

Dr. BARKAN presented an unusually interesting case of syphilitic disease. The patient was a woman of about 25 years of age, three months married. The husband had been treated for syphilitic disease of the eye several years before; it was not known whether there had been illicit intercourse between the two prior to marriage or not. The family history of the patient was negative. No history of any trouble that would tend to point to congenital syphilis could be elicited. The right eye was the seat of syphilitic gummata of the iris, so stated Dr. Barkan, with plastic exudate that could be plainly seen on examination, by the members of the Society. The lumpy appearance of the iris was also quite visible, but the fact was pointed out by Dr. Martin that these lesions of the iris were of the nature of papillomata rather than gummata. The left eye showed a very unusual condition. In the median line of the eye and immediately below the margin of the cornea, slightly encroaching upon the cornea itself, a large mass was to be seen. The conjunctiva was greatly congested. The mass was about the size of a small hazelnut, somewhat larger in its transverse than in its longitudinal dimension. At the top of the tumor was a small greyish spot which Dr. Barkan said had developed within the last few days; this was apparently the commencement of a sloughing process. On the forehead, just above the inner angle of the right eye was a large dry scab surrounding a deep pit, also dry. On the forearms were four large, round scabs covering ulcerating areas, two on each forearm, the arrangement being symmetric on the two forearms. These areas were about five-eighths of an inch in diameter. On the back were several more sores of the same general size and character, and on the right leg was another similar sore. On the right tibia, at the upper end of the lower third, was a very marked gumma, about two to three inches in diameter, and very hard. It seemed to be a well-marked case of tertiary syphilide.

Some discussion arose as to the probable seat of the gumma of the left eye. The question as to whether it was situated in the tissues immediately below the conjunctiva, or whether it was a gumma of the uveal body which had grown upward and outward, was discussed at some length. No definite conclusion was arrived at, however.

In the matter of treatment, also, some difference of opinion was called forth. Dr. Barkan stated that the treatment he was now giving the patient consisted of inunctions of mercurial ointment together with twenty grains of iodid of potassium, three times daily. He also stated that he should increase the iodid up to thirty grains three times daily. The advisability of giving very much larger doses of the iodid was suggested by several members, who stated that their experience led them to use doses as high as 100 to 150 grains, three times daily. By other members it was claimed that a maximum effect could be obtained with very much smaller doses; 20 to 30 grains, t. i. d. The prognosis, it was agreed, was bad; the probabilities being that the left eye would slough before the iodid or other treatment could be made to have its proper effect.

Dr. POWERS introduced a patient he had previously brought before the Society, in whom he had found a tumor of the left eye, intra-orbital. After seeing the patient for some time, and carefully examining him upon a number of occasions, he elicited the fact that the man had had the end of his thumb removed, in London, for what he said the doctors there had told him was syphilis. No other history could be made out. Upon the assumption that this might be the case, proper syphilitic treatment was employed with almost immediate benefit. The tumor had very materially reduced in size, and the objective and subjective symptoms had very much changed for the better.

The question of adding to the literature relating to the eye, ear, nose and throat in the library of the San Francisco County Society was brought up, and after some discussion it was decided to vote the sum of $50 to be expended by Drs. Philip Mills Jones and Kaspar Pischol, in purchasing as many numbers as possible of the volumes missing from the files of the principal journals on the subjects noted.

PRACTICAL NOTES.

Dressing for Psoriasis.—Unna uses a collodion made of chrysarobin and salicylic acid, āā 2 gm.; collodion, 20 gm.

Salve for Pruritis.—Benzoinized lard 40 gm., Sydenham's laudanum 4 gm., chloroform 3 gm., extract of belladonna 2 gm., extract of conium 1 gm. (Lutaud).—*Jour. de Méd. de Paris*, December 4.

Accidents from Dermatol.—A Russian exchange relates that dermatol caused severe inflammation in two cases in which it was applied to the penis; its use for this organ seems to be counter indicated.—*Nouv. Remèdes*, October 24.

Hernia Disposition.—Kocher observes that he always investigates the other side when operating for hernia, frequently finding and remedying an evident weakness of the abdominal wall at that point.—*Cbl. f. Chir.*, November 12.

Dressing for Wounds.—Lutaud recommends dusting the wound with the following: Zinc oxid and starch āā 15 gm., tannin 2 gm., crystalized phenic acid .50 gm. This powder, kept in place with a pledget, is especially effective for ulcerations of the cervix.—*Jour. de Méd. de Paris*, December 4.

Ablation of the Gall-Bladder.—De Voogt's experimental investigations confirm Oddi's assertions that extirpation of the gall-bladder is far from a serious operation, and that the organ grows again afterward, hence it is not a permanently effective measure against cholelithiasis. It is only indicated in case of neoplasms or much degenerative changes.—*Cbl. f. Chir.*, November 5.

Iodoformogen.—E. Kromayer endorses this odorless preparation of iodoform as the best method of applying iodoform which we possess. It consists principally of albumin and iodoform; is three times lighter than the latter and its odor under the dressings, even on extensive wounds, is not perceptible. It favors the production of granulations and a rapid epithelial epidermization, as he has established by experience with over a hundred patients.—*Annales de Derm.*, October.

Chemic Effect of Sterilizing Milk.—Wroblewski sterilized each element of the milk separately and found that the altered appearance and taste are due to a caramelizing of the milk sugar, with the formation of a small amount of lactic acid, also that the albumin was coagulated, and the casein partially precipitated. Pasteurizing produces the same alterations in a slighter degree. His tests prove that sterilizing milk does not render it any less digestible.—*Deutsche Med. Woch.*, December 15.

Thyroid Treatment in Fractures.—Some cases have been recently reported in which thyroid treatment proved promptly effective in promoting the consolidation of the bone after a fracture. Reclus observes of one case: "the large callus melted away before our eyes, and the consolidation was rapidly effected," although his experience was negative in two or three other cases.—*Presse Méd.*, December 3.

Curare in Epilepsy.—Professor Kunze reports three cases permanently cured to date and three very much improved, out of thirteen treated. One promised a successful result but is still recent. The majority were severe and inveterate cases. Two other cases of hystero-epilepsy were not affected. He injects a third of the following solution every five days, and has never noted pain, reflex disturbances nor indications of intoxication: Curare .5 gm., aq. dest., 5 gm.; hydrochloric acid 1 drop. Set aside for twenty-four hours and filter.—*Jour. de Méd. de Paris*, December 11.

Myxedema and Sleep Disease.—Several writers in the *Presse Méd.* of late have commented upon the similarity that exists between these two affections, which suggests similar treatment. They have, in fact, applied thyroid treatment to the latter with considerable success. In one case there was concomitant hypertrophy of the thyroid gland. Both affections seem to be due to an intoxication from anomalies in the secretions of this gland, usually combined with hepatic insufficiency. Abstract in *Munich Med. Woch.*, December 6.

Serodiagnosis in Typhoid Fever.—C. Tarchetti concludes from a comprehensive study of a number of cases, that the intensity of the agglutinating power depends upon two factors: the character of the infection and the resistance of the organism, but that it is extremely difficult to draw any reliable conclusions in regard to the prognosis from a comparison of the height of the thermic curve with the curve of the agglutination.—*Gazz. degli Osp.*, November 6.

Bright's Disease.—Lemoine recommends the following potion to stimulate the cutaneous perspiration in cases of Bright's disease with uremia imminent: Pilocarpin hydrochlorate, .01 gm.; mucilaginous vehicle, 100 gm. Take three to six tablespoons a day. This amount of pilocarpin is not sufficient to cause any disturbance, and yet it effectively stimulates the functions of the skin.—*Semaine Méd.*, December 7.

Applying a Stomach Fistula.—M. M. Trofimow cuts an oval flap five by three centimeters, and turns it over backward, the broad end upward, suturing it in place. Four stitches are then taken across the hole, drawing it together until nothing is left of it but a triangular opening at one end. Four stitches are then taken at right angles, two at each side of the fistula. When drawn up, the first stitches are entirely concealed and a round opening left, with the folds working as a perfect valve. He has thus operated three cases with great success, but in his two last, he saw a little pus in the abdominal cavity.—*Cbl. f. Chir.*, November 12. Illustrated.

Captol.—J. Eichhoff finds that captol, a combination of tannin and chloral, has a remarkable effect on seborrhea of the scalp accompanied by pruritus, desquamation and loss of hair. He recommends the following formula: Captol, chloral hydrate, and tartaric acid āā 1 gm., castor-oil .5 gm,, spirit of lavender q.s., wine alcohol, 65 per cent., 100 gm. Another effective formula substitutes resorcin for the chloral and adds of salicylic acid .7 gm. Apply a small amount in the palm of the hand once or twice a day, with friction until dry. The effect is more rapid with dry than with oily seborrhea.—*Annales de Derm.*, from *Derm. Ztft.*, 1888, p. 25.

Aid to Diagnosis of Cancer of the Stomach.—Guinard states that by insufflating the stomach it is possible to disclose the existence of a tumor otherwise undiscoverable. If a tumor disappears after insufflation it shows that it must be located on the posterior wall. He insufflates with the tube and bulb of a thermocautery. The subject takes 25 to 30 centimeters of the tube in his mouth, first dipped in water or glycerin, and swallows it as he drinks a little water, like a tube of macaroni. He remarks: "some persons object, but with a little patience, authority and persuasion one arrives."—*Presse Méd.*, December 3.

Operating Uterine Fibroma.—Chandelux has noticed that if the cervix is completely effaced in case of a voluminous fibroma, there is reason to assume a subperitoneal extension of the tumor, creating serious operative dangers. When the cervix has retained part of its normal characteristics, the tumor can usually be pediculized and hemorrhage arrested by compression of the pedicle, but if it is deformed or effaced, fatal hemorrhages may ensue in the course of an operation.—*Semaine Méd.*, December 7.

Treatment of the Ears in Whooping-Cough.—G. A. Stephens has found that the paroxysms of coughing diminished or ceased altogether after treating the ears, which often in this disease have a serous or purulent secretion or are merely sensitive to pressure. After washing the ear morning and night with warm boricated water, he paints the external passages and the mem-

brana tympani with the following: cocain hydrochlorate 1.25 gm., glycerin 16 gm., Van Swieten's solution 20 drops, aq. dest. 15 gm.—*Semaine Méd.*, December 7.

Electric Treatment of Hysteric Gastralgia.—Certain gastralgias of evidently hysteric origin may simulate an early and frequently isolated symptom of tabes. These two forms of gastralgia may be differentiated by well applied franklinization, as in a case reported by Apostoli and Planet, which had resisted all treatment for ten years, and led to the diagnosis of tabes, cured with franklinization alone. Static electric treatment reveals the hysteric origin, as it indicates the peripheral anomalies in the sensibility, and applied with patience, cures the hysteric gastralgia completely.—*Gaz. Méd. de Paris*, December 2.

Baldness After Use of Thallium Acetate.—The JOURNAL has mentioned the case of sudden alopecia in a woman 47 years of age, resulting from taking nine doses of three centigrams each of thallium acetate, recommended for the night sweats of phthisis. Paul Berthod draws a moral from this case and preaches greater caution in the use of new remedies, "in these days of lack of confidence in the profession." A third of the patient's scalp is completely bare, and although a few hairs have sprouted during the six weeks since, the majority seem definitely destroyed, with atrophied bulbs.—*Annales de Derm.*, November.

Phenic Acid in Severe Erysipelas.—Fedele reports a case of erysipelas of the face and scalp, with fever at 41 degrees C., delirium, and other alarming symptoms, which resisted the usual treatment but yielded to hypodermic injections of phenic acid: aq. dest. 100 gm., alcohol 4 gm., phenic acid 2 gm. A hundred and ten injections were required during the eight days before complete cure, a total of 220 centigrams of phenic acid. Luciani ascribes this tolerance to the combination of the phenol with sulphuric acid, producing phenol-sulphuric ether, which the organism can tolerate to a much greater extent. Ascoli suggests that possibly in an acute infection the organism has an enlarged protective mechanism at its disposal that preserves as well against acid intoxication.—*Gazetta degli Osp.*, October 23.

To Apply Dressings to the Knee and Elbow.—Unna applies a layer of zinc oxid glue to the extensor muscles, above and below the articulation, and then paints a strip five centimeters wide around the limb, leaving the front of the joint untouched. The desired salve or plaster is then applied to the joint, covered with an impermeable cloth and then with a layer of the zinc glue. A long strip of gauze is then wound around the whole in a figure 8, crossing on the point of the elbow or knee, while the inner bend is left exposed. The outer layer of gauze is then painted with glue and a layer of cotton applied. This dressing remains in place, does not interfere with the movements of the joint, and can be left for several days.—*Semaine Méd.*, December 7.

Oxygenated Water.—Lucas-Championniére and Laborde recommend oxygenated water as a powerful and harmless antiseptic, with hemostatic properties that entitle it to a higher place in therapeutics. The former asserts that it is not adapted for topic applications, but that its value lies in its efficacy in lavages. He has found it particularly useful in preparing the vagina for hysterectomy, and for intrauterine injections after abortion with fetidity and temperature, for which it is as effective as curettement. Laborde states that it can be introduced into the veins without danger, and thus be applied to destroy ahthrax germs in the blood.—*Bull. of Paris Acad. of Med.*, December 6.

Metal Clamps for Bone Prothesis.—Anghel has devised a steel clamp—a bar shaped like a prism, with pointed ends at right angles, to hold the bones together. The sharp edge of the prism sinks into the tissues and holds it firm so that massage can be applied at once and the patient be allowed to walk. Juvara's device is a silver plate with projecting tongues and corresponding holes on the other end, so that it fits tight around the bone, the tongues inserted into the holes holding it close and firm like a girth. Neither of these clamps has been tested, except on the cadaver.—Bucharest, *Revista de Chir.*, 1898, 1.

Exosplenopexy.—Houzel operated an enormously hypertrophied spleen by suturing the parietal peritoneum to the spleen capsule, thus exposing the larger part of the spleen to the air, hoping that the portion of the tissue thus exposed would necrose off without contact with the peritoneal cavity. The bold experiment succeeded, and the woman is now, twenty months later, working on a farm. After four weeks of suppuration that did not seem to affect the general health, a portion of the spleen as large as a man's hand sloughed off, and the laparotomy wound could be closed six weeks later. Stolper relates a case in which the spleen had necrosed and become a hard mass in the organism, without contact with the air, and only discovered at the necropsy.—*Cbl. f. Chir.*, December 1.

Saline Injections in Burns.—When the surface is much burned the circulatory apparatus, becoming chocked by the thickening of the blood from loss of serum, may entail the most serious consequences and even death, as in a case Vignier reported years ago: a man fell into boiling water, which caused such a coagulation of the blood that none issued when a vein was opened. Large injections of salt solution dilute the blood to its normal fluidity and restore normal conditions. Besson describes a case of extensive burns in which he injected ten liters of salt solution in five days, with the result that the delirium was arrested at once, the kidneys restored to normal and the patient was soon cured, when the prognosis had been most serious.—*Jour. des Sc. de Méd. de Lille*, December 3.

Wandering Kidney and Appendicitis.—Edebohls stated in 1894 that he had found 60 per cent. of his cases of appendicitis in woman accompanied by wandering kidney, and later experiences confirm this assertion. Chronic appendicitis is the most constant consequence of wandering kidney, which presses against the head of the pancreas, thus compressing the superior mesenteric vein against the vertebræ, determining a chronic stasis in the appendix. The connection might even be traced still further and it be shown that both appendicitis and wandering kidney are due to some relaxation of the peritoneal supports. In twelve cases the appendicitis was cured by nephropexy. If the appendicitis is of long standing, ablation is indicated.—*Cbl. f. Gyn.*, No. 40.

Tertiary Syphilitic Lesions Without Antecedents.—Viannay found that over one-half the women in a hundred cases of typic tertiary lesions investigated at the hospital, were unable to recall any primary or secondary manifestations. In the rest the findings were only positive in thirty-two cases, and in half of these there was merely a history of abortions or children dying young; no specific lesions. He considers, therefore, that in hospital practice every affection that syphilis can entail directly or indirectly, is undoubtedly due to it, in 48 per cent. of the cases at least. He also proves by personal and other statistics, the positive syphilitic origin of tabes, general paralysis and spontaneous aneurysms in women, in the same or even a larger proportion, although they follow a severer form of syphilis and the early manifestations did not pass unnoticed, but required treatment.—*Annales de Derm.*, October.

Modern Treatment of Tetanus.—The *Progrès Méd.* of December 3 describes a severe typic case of tetanic infection cured by treatment directed against: 1, the tetanic bacillus which remains at the entering point, where it generates its toxins; 2, against the association of the anaërobic Nicolaier bacillus with other microbes, which enhances its injurious effects; 3, the toxins passing into the blood, and 4, the effect of the toxins on the nerve centers. The large wound on the arm was treated

about every second day with an arm bath of a solution of potassium permanganate, to avoid secondary infections. The intoxication was kept under control by lavage of the blood, venesection, which eliminated a certain amount of the toxin, and the injection of antitoxin to neutralize the toxin left in the circulation. Chloral was given to diminish the erethism. The patient, a mason, 40 years of age, was able to sit up by the end of a month of suffering and was discharged cured twenty-five days later, although the prognosis had been most unfavorable.

Winkelmann's Operation for Hydrocele.—Winkelmann has been practicing for a year and a half with most satisfactory results, a very simple but radical method of treating hydrocele. The fluid is released through an incision three to four centimeters in length, nearer the upper pole, after Schleich local anesthesia. The testis is then drawn outward as far as possible until stripped of the serous tunica vaginalis covering, which is thus turned wrong side out. A stitch or two is taken to prevent the testis from slipping back into its sac and the testis and the tunica are replaced, and the skin sutured. Adherences soon form, and this harmless operation proves as effective as the more radical ones. The testis is a trifle higher than normal, and a slight edematous swelling may form for a short time, but there are no other inconveniences, and the patient can be dismissed at once, as there is no danger of hemorrhage.—*Cbl. f. Chir.*, November 5.

Bardenheuer's Operation for Hypospadia.—The *Cbl. f. Chir.* of November 5, illustrates an operation performed on a three-year-old child at one sitting, with scarcely any after catheterization, which proved so successful that no traces of the deformity could be seen in four weeks. The skin of the penis is detached and slit toward the root on the under side, and the urethra mobilized and stretched. A broad trocar is then inserted in the tip of the penis at the point of a normal orifice, and worked down to meet the urethra, which is then pulled up through the channel thus made and sutured with four stitches at the tip of the glans. To prevent pulling on these stitches, the urethra is sutured with four other stitches to the neighboring tissue before entering the glans, and the skin is sutured together over it. Hacker has suggested a somewhat similar operation, but he detaches the corpus cavernosum with the urethra, and only sutures the latter at the orifice.—*Beitr. z. klin. Chir.*, xxii, 1.

Topic Applications on Temperature.—Finkelstein announces that the local application of betanaphthol (25 to 50 drops of a solution of one part betanaphthol to four of 75 per cent. alcohol), will reduce the temperature in children with fever, falling during the first hour, afterward to its maximum in the second hour: 3.2 degrees Celsius. The pulse and respiration also grow slower. The effect was marked in 86 per cent. of his cases; stronger at night than in the morning, and as the fever was more elevated. By repeating the inunctions the temperature was kept permanently reduced. The influence was most decided in typhoid fever and fibrinous pneumonia, less in scarlet fever, and uncertain in tuberculosis. The absorption is so slight that it is difficult to detect any traces of the naphthol in the urine. The radiating heat and the evaporating from the skin diminish at the same time. He explains its effects by reflex action on the calorification centers, with a diminished production of heat as the primary cause. (*Nouveaux Remèdes*, November 24). The ingestion of naphthol and inhalations produced no effect of the kind, and inunctions with twenty-five other substances tested were also negative.

Treatment of Eclampsia.—Three numbers of the *Clinica Moderna* are devoted to this subject, describing the treatment adopted by Brunelli at Pisa and the satisfactory results. His conclusions are that every pregnant woman with albumin in the urine, should be restricted to an exclusive milk diet. Soothe the nerve centers with a rectal injection of a moderate amount of chloral, or with chloroform, or both combined. Administer purgatives per os, or rectum, if patient is unconscious, following with an abundant enema of salt solution, and in case of much pulmonary or cerebral congestion, a moderate amount of blood may be withdrawn. If these measures fail to arrest the attacks, the obstetrician is justified in producing artificial delivery. If labor is already under way he can assist nature, but if not, and the condition is very serious, Cesarean section is indicated, if sufficient assistance is at hand. If alone and delay is dangerous, forced delivery should be resorted to with Tarnier and Hegar dilators. Chloroform in either case.—*Gazz. degli Osp.*, December 4.

Otitis and General Pathology.—G. Herman describes four cases out of a large experience, in which patients had been under treatment by specialists for years, for chronic catarrh of the middle ear, without result. He became convinced that the trouble was favored by the disturbances in the digestion and circulation which he noted in each case, although not severe enough to attract the subject's attention, or ever induce him to apply to a general practitioner. One, a student, he advised to go and work on a farm during the summer vacation; another, a wealthy landed proprietor, he persuaded to dispense with his carriage and make his rounds on foot, and the rest received corresponding advice. The improvement that followed in the general health soon resulted in the cure of the ear trouble, Vulpius has used thyroid treatment to advantage in similar cases. Hermann recommends, therefore, that the general health of persons of obese and sedentary habits be improved as a preliminary or accompanying measure to treating obstinate otitis and checking incipient sclerosis.—*Deutsche Med. Woch.*, December 8.

Malarial Infection and the Female Genitals.—Dr. Lemanski, a gynecologist of Tunis, has been studying the effect of malaria infection on uterine affections and pregnancy, and notes that metritis is rebellious to curetting, unless the malarial diathesis is treated at the same time. The menses are frequently painful, excessive and irregular. In some, after a long period of dysmenorrhea with menorrhagia, the menses are arrested. In others there is frequently a partially intermittent metrorrhagia in the intervals. Malarial infection predisposes a pregnant woman to all the discomforts to which the condition is liable. Vomiting is frequent, and although seldom uncontrollable, is serious. Hemorrhage in the course of the pregnancy is frequent, and false labor. Delivery is slow, labor difficult and the fetus generally small. Abortions are frequent in women with latent or chronic paludism, and invariable in the pernicious form. There is often an intermittent postpartum hyperthermia. In all these cases quinin works wonders. He supplements it with quinquina, arsenic, potassium iodid, and hydrotherapy as indicated, preferring the rectal or subcutaneous administration of quinin in urgent cases.—*Journ. de Méd. de Paris*, December 11.

Immediate Massage of Fractures.—The massage should be extremely cautious and gentle, and include the entire group of muscles, omitting none. The adjoining articulation must not be worked too violently, either by the masseur or the subject himself. Dagron reports that fractures of the two bones of the forearm in children are cured in twenty days with mobilization and massage (Lucas-Championnière), and of the lower end of the humerus in twenty-six days. By "cure" he means absolute restoration to integrity, without either functional or plastic troubles, a solid callus and muscles ready to work the consolidated skeleton normally. Fifteen to twenty minutes are required for the mobilization, and the maneuvers should never cause pain. In fractures involving the periosteum, in rhachitic children, in syphilitic adults, the mobilization and massage must be applied at a distance, not directly to the injured spot.

In fractures of the olecranon, with a space of two centimeters, this will increase to three after mobilization, and gradually close up to one centimeter. This is the best result attainable. —*Presse Méd.*, December 3.

Indications for a "Carlsbad Cure."—The principal effect of Carlsbad waters is to reduce the inflammation. They do not dissolve and carry off stones, and this should not be expected of them. H. Kehr establishes the following indications for treatment: Acute occlusion of the choledochus without cholangitic symptoms; inflammable processes of the gall-bladder with or without icterus, with infrequent and not too violent pains; frequent colics and passages of stones. If the stones do not pass off, surgical intervention is required; also in case of obese, gouty and diabetic persons, and for all those who are unable to submit to narcosis; also after an operation, to prevent inflammation. If the stone is in the bile-duct, cholagogic remedies are called for, but if in the gall-bladder they are counter-indicated and the aim should be to soothe. An operation is required under all circumstances in acute, seropurulent cholecystitis and pericholecystitis, or the resulting adherences; in chronic occlusion of the choledochus; in forms commencing lightly, but resisting all treatment and producing permanent disturbances; in purulent cholangitis and hepatic abscess; in perforating processes in the biliary passages or peritonitis, and in gall-stone morphinism.—*Deutsche Med. Woch.*, December 15.

Value of Phlebectomy.—Longuet and Balthazard report (*Presse Méd.* of December 7) the resection of the leg portion of the saphenus externus for a voluminous varicose thrombophlebitis, with most satisfactory results. The vein excised, unopened, between ligatures measured forty-nine centimeters unstraightened. They cut out a spindle-shaped piece of the integument according to Schwartz' suggestion, to make "a natural elastic stocking," and this is the only detail they regret, as the tension on the weakened tissue resulted in two stitches tearing out. Henceforth they observe, "a non-elastic natural stocking will content them." With the exception of very benign phlebitis, which may yield to rest, and phlebitis in extremely debilitated persons, diabetics and albuminurics, phlebectomy will be found the best means of treatment in all cases. It is legitimate; no accidents have followed it in the sixteen cases published. It prevents additional complications; the spread of the affection into inaccessible regions, the transformation of an adhesive into a suppurating phlebitis, or, chief in importance, the development of neuritis, with the whole train of neuro-trophic disturbances. If the phlebitis develops microbian embolism it may prove fatal. Three such cases have been reported. In one the incision of a varicose thrombosed ampulla resulted in fatal septicemia in twenty-four hours. Deaths from sanguine embolism are still more frequent (12). Phlebectomy is therefore the most valuable preventive treatment for all the complications of varicose thrombophlebitis. Quénu has successfully operated on two cases during pregnancy. The cure is absolute and permanent; no trace of pain in standing or walking, no induration, no edema.

Sexual Operations for Hypertrophied Prostate.—Albarran and Motz conclude, from a study of 183 observations, that it is impossible to tell beforehand whether the glandular or intraglandular element was involved in the hypertrophy, while the fact seems to be established that only the glandular element is regularly affected by sexual operation. Neither the softness nor the hardness nor the size affords any reliable data, although it was noted that most glandular prostates were of medium size. Motz found, at the necropsy of thirty cases, that the hypertrophy was due in two-thirds of the cases to development of glandular tissues. Sexual operations on animals proved invariably successful in determining a positive atrophy of the prostate; most rapid and decided after double castration and after angioneurectomy of the cord. The atrophy after resection of the vas deferens is not complete for three months. Unilateral operations are insufficient. Angioneurectomy of the cord has been applied to man with one failure in a case of complete retention, and with marked success in three cases of complete retention (vide JOURNAL, XXX, p. 220: "It consists in resecting for a short distance all the elements of the cord with the exception of the vas deferens, the artery of the vas and one or two of the accompanying veins"). After double castration the prostate diminished effectively in size in 17 cases of dysuria, 41 of acute retention, and 47 of chronic retention. In Albarran's personal experience the atrophy has been tardily and progressively produced. He disapproves of interfering in the first stage of prostatism, and also in acute retention, which may be cured by catheterization alone.—*Bulletin de l'Acad. de Méd.*, November 29.

Renal Congestion of Nephritic Type.—An attack of renal colic with the descent of the calculus, in arthritic persons, is sometimes followed after a few hours of calm with a gnawing pain in the renal region, extending to the prostate, the bowels, bladder and penis, but strictly unilateral, with constant desires for miction and defecation. There is no fever, no appetite, but much thirst; sometimes nausea, but no vomiting. Rest or sleep is impossible, and this condition may last for hours or days—twelve days in one case. No relief is obtained from anodynes per os or rectum, or subcutaneously. A similar condition may occur, but less acute, without the preceding attack of colic. It is rational to assume that it is due to a congestion of the kidney caused by the passage of the calculus, overexertion, cold, or something of the kind. Treatment directed to a supposed calculus or gravel is worse than useless, but the application of six to ten leeches over the kidney relieves at once, and the patient drops to sleep. When he awakes, he passes clear urine abundantly, with no traces of gravel. Phlebotomy may be necessary for very plethoric persons. Apply the leeches in a glass after cleansing the region; let them suck until gorged, then wash the place again and apply a compress of boricated or saloled gauze, with a layer of cotton and a bandage around the body to hold it. Pousson considers renal incision indicated in nephritic colic as having "the triple advantage of diminishing the intrarenal tension, arresting the spasm and preventing the evolution of lesions in the renal epithelium." The same effect is attained in these cases by the leeches, which will usually be found more convenient than cupping.—P. A. Mesnard, *Presse Méd.*, December 3.

Tribromphenol-Bismuth.—Somers (*N. Y. Med. Jour.*, Dec. 24, 1898) writes on this compound as an antiseptic in chronic suppurative otitis media. His method is to thoroughly cleanse the external canal and middle ear with hydrogen peroxid applied on a cotton-tipped applicator, all granulation tissue having previously been removed. He then lightly dusts the powder over the secreting surfaces and inserts a gauze drain, which reaches from the tympanic margin to the concha, fitting into the concha, and over the external canal he places a pad of sterile absorbent cotton and allows this to remain for one or two days, according to the amount of discharge. In cases in which the use of this treatment, after other methods and remedies, had been tried, they were all apparently cured, and he has treated more than one hundred cases. It does not stain the parts as does pyoktanin, nor does it cake like boric acid, and it not only lessens but changes the character of the discharges from the middle ear. Being slowly decomposed in the ear, its action is of considerable duration, thus keeping the mucous surfaces antiseptic for a longer period than any other remedy. He especially emphasizes a thorough cleansing of the canal and tympanic cavity before applying any of the powder, as it has little or no influence unless brought in immediate contact with the pus producing surface. Through its sedative action pruritis is also allayed, permitting more rapid repair (vide JOURNAL, Oct. 15, 1898, p. 897).

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THE SO-CALLED EMBRYONAL GLANDULAR TUMORS OF THE KIDNEY.

Our knowledge of tumors is constantly increasing. The occurrence of certain tumors in childhood and infancy has of late attracted especial notice. Many of these tumors of early life are frequently referred to as congenital, but as LUBARSCH emphasizes, the frequency with which tumors in childhood are observed does not constitute any proof of their congenital origin. However, when such tumors develop before or very soon after birth, and when certain heterologous formations of tissue depending upon misplacements are found in them, they can certainly be looked upon as substantiating COHNHEIM'S theory of the development of tumors from an embryonal matrix.

It has long been noted that the genito-urinary organs are especially liable to be the seat of tumors in early life. The kidney is the part of the genito-urinary tract most frequently involved, and the tumors observed are more often malignant than benign. HEINECKE[1] collected 138 malignant tumors of the kidney in early life, and found that 11.1 per cent. occurred in the first year of life, 21.5 per cent. in the second and third years, 12.6 per cent. in the fourth year, 14.8 per cent. in the fifth, 6.7 per cent. in the sixth, and 1.5 per cent. in the ninth, so that the second and third years of life show the greatest number of tumors. These tumors occur with about equal frequency in the two sexes, and there does not seem to be any special preference for either the right or left kidney. Sometimes both kidneys are involved. Of HEINECKE'S 138 cases, 42 developed metastases.

[1] Quoted by Merkel, Ziegler's Beitrage, 24, p. 475.

There has not been uniformity in the classification of malignant tumors of the kidney in early life. They have been described as epithelial in character, as endothelial and sarcomatous; as developing from misplaced remnants of the adrenal, and finally, not a few rhabdomyomas are mentioned. In 1897 HEINECKE could refer to fifteen tumors of the last type. MERKEL,[2] from whose article these facts are gathered, finds that there are now twenty-three rhabdomyomas of the kidney of young persons reported, including one case which he now publishes.

The occurrence of striped muscular tissue in an organ which normally does not contain any such tissue has long been a source of interest, so much so as to perhaps unduly monopolize the attention of the investigators. Only recently KOCHER and LANGHANS pointed out the existence of a second characteristic part in the rhabdomyomas, viz., glandular tubules. BIRCH-HIRSCHFELD[3] regards these tumors as developing from elements that have remained in an embryonal stage, and proposes to call them, no matter whether they contain striped muscular tissue or not, embryonal glandular tumors of the kidney, and assumes that they originate in misplaced remnants of the Wolffian body. This point of view in regard to many of the infantile tunors of the kidney, including rhabdomyomas, has already been advocated by PERTHES,[4] and it seems reasonable to suppose that perhaps a larger part of the renal infantile tumors belong to this class than is yet apparent. BIRCH-HIRSCHFELD expresses the opinion that the largest part of the malignant renal tumors of early life, which have been described as carcinomas, adenocarcinomas, sarcocarcinomas, adenosarcomas, and myosarcomas, belong to the group which he designates as embryonic glandular tumors. He cites in support of this opinion the fact that certain cases which he himself, as well as others, had diagnosed as simple sarcomas, proved upon subsequent more extensive examination to contain striped muscular tissue and other elements characteristic of this new tumor group.

MERKEL describes two new tumors of this kind, which seem to represent different developmental stages in the same type of tumor. From the microscopic study of the first case he concludes that it might properly be called a pericanalicular adenosarcoma, and the second case a pericanalicular striocellular adenomyosarcoma. These phrases are quite descriptive of the structure of these growths.

In both instances a conspicuous element of the tumor is glandular tubules lined with low columnar epithelium, around which is arranged a layer of more or less typic sarcomatous tissue; hence the term pericanalicular adenosarcoma. The presence of muscular tissue is not constant in all the tumors which have

[2] Loc. cit.
[3] Zeigler's Beitrage, xxiv, Heft 2.
[4] D. Zeitsch, f. Chirurgie, 42, 1896.

the peculiar glandular structure. Of the twenty-two cases in which striped muscular tissue was present one was a prominent feature, the tumor was bilateral four times, but in only two of these cases were the striped muscle fibers present in both tumors. Nodules may occur in which the striped muscular tissue is absent, consequently it would seem that both kinds of tumors belong to the same class, as pointed out by MERKEL. The presence of a small quantity of muscular tissue in a large tumor might very readily be overlooked in the microscopic examination. The relationship referred to is also emphasized by the clinical features of the growths in question.

The course of the disease in renal tumors, especially of this type, is usually very rapid as soon as the first severe symptoms become apparent. In many of the cases a growth of the tumor into the renal veins and vena cava occurred.

While the presence of striped muscle fibers is referred by nearly all writers to misplaced embryonal tissue, the explanations of the glandular formations vary widely. They are referred by some to proliferated lymphatic endothelium; by others to misplaced epithelium of the renal pelvis; others regard them as due to proliferation of the uriniferous tubules. The pericanalicular sarcomatous masses are regarded by some as originating in the interstitial tissue of the matrix, by others as an early stage in the development of the striped muscular fibers. ORTH says that while the typic renal carcinoma in older persons must be regarded as springing from the normal epithelium of the uriniferous tubules, the so-called carcinomatous tumors of early life must, on the other hand, be regarded as developing from abnormal embryonal deposits. As already indicated, BIRCH-HIRSCHFELD has especially studied the etiology of these tumors, and he regards them as representing immature embryonal glandular formations. The embryonal character is shown in the immature state of the glandular tissue, as well as in the condition of the stroma, which contains different embryonal connective tissse elements. Personal examination of human embryos leads BIRCH-HIRSCHFELD to say that the relation between the Wolffian body and the *anlage* of the kidney is so close, that the supposition that a part of the former could be included in the developing kidney is no more unreasonable than the inclusion of adrenal tissue in the kidney, a fact which is now generally accepted.

BIRCH-HIRSCHFELD'S hypothesis seems most likely to be generally accepted as explaining the origin of these interesting tumors. We have, therefore, in the embryonal glandular tumors of the kidney, in all probability, an example of tumor developing from the misplacement of pieces of one organ, in this case a temporary structure, into another and a prominent tissue.

MULTIPLE ULCERATION OF THE STOMACH WITH ANACHLORHYDRIA.

Although neither absence of hydrochloric acid from the gastric contents or the presence of lactic acid on the one hand nor hyperchloracidity on the other hand is any longer considered pathognomonic of carcinoma or ulceration of the stomach respectively, each of these phenomena must be conceded certain diagnostic significance. It is important, however, to be on guard for the exceptions and anomalous conditions, and a forcible illustration of this necessity, as well as that of avoiding dogmatism in our conclusions is afforded by a recent communication of KROKIEWICZ (*Wien. klin. Woch.*, 1898, No. 48, p. 1101), in which he reports a case of multiple ulceration of the stomach, with disappearance of free hydrochloric acid from the gastric contents in spite of the fact that the patient received dilute hydrochloric acid as a therapeutic agent.

The patient was a servant-girl, 40 years old, who for a year and a half had suffered from symptoms of gastric derangement. At the inception of the illness there had been vomiting, diarrhea and pain in the right hypochondrium, followed after a time by transitory nausea of varying intensity. There had never been jaundice, but for several months there had been loss of flesh and strength and distaste for food. Axillary, cervical and inguinal glands were slightly enlarged, the overlying skin movable. The percussion-note was slightly impaired over the apices of both lungs, especially on the left, where also bronchial breathing and consonating râles were audible. In other situations the breath-sounds were whistling and wheezing. The abdominal walls were relaxed and the recti muscles separated. The peristaltic movements of the intestines were visible. Splashing could be elicited in the bowel. The epigastrium was sensitive and a sense of distinct resistance was appreciable at the pylorus. After the introduction of 250 gm. of milk the lower border of the stomach was found 2 cm. above the umbilicus. On deep pressure slight enlargement of mesenteric and retroperitoneal glands could be appreciated. Ingestion of solid food and of acids was followed by epigastric pain. Scarcely 1 c.c. of light icteric, neutral fluid was removed from the fasting stomach with a tube, and but little more of consistent mushy material containing casein and bits of roll of acid reaction and with traces of free hydrochloric acid after a milk-breakfast. Some ten days later not even a trace of free hydrochloric acid could be detected in the gastric contents an hour after a meal of milk and roll.

Examination of the blood disclosed the presence of 4,016,000 erythrocytes without noteworthy peculiarity and 12,400 leucocytes to the cubic millimeter, with 70 per cent. of hemoglobin. The condition of the patient grew progressively worse, and death en-

sued in collapse following hematemesis. The autopsy disclosed the presence of thirty peptic ulcers on the floor and posterior wall of the stomach, together with tuberculosis of the large intestine and of the lungs, and enlargement and caseation of mesenteric and retroperitoneal glands.

We have thus a case in which in spite of the existence of symptoms indicative of carcinoma of the stomach: cachexia, long duration, impaired appetite, the autopsy disclosed the presence of multiple ulceration. The absence of free hydrochloric acid from the gastric contents may, it is suggested, be related to the multiplicity of the ulcers and also indicative of a grave state and perhaps a fatal issue, while the multiplicity of the lesion is considered as pointing to an embolic origin. From a diagnostic point of view the results of examination of the blood may afford a means of differentiation between gastric ulcer and gastric carcinoma, as the reduction in the number of erythrocytes is always more considerable in cases of advanced carcinoma of the stomach than existed in the case recorded.

KROKIEWICZ (*Wien. klin. Woch.*, 1897, No. 51) has previously recorded a case in which during the last six weeks of life there had been complete absence of free hydrochloric acid, while postmortem examination disclosed the presence of three ulcers in the stomach, one at the cardia, one at the pylorus and one on the lesser curvature. Both observations, it is pointed out, show at least that free hydrochloric acid may disappear from the gastric contents in cases of ulceration of the stomach before the occurrence of hematemesis.

THE STRENGTH AND RELIABILITY OF DRUGS.

The strength and reliability of drugs do not receive proper attention by physicians for, as a matter of fact, these important attributes of a drug are lacking for several reasons in many instances. Aside from the fact that the gatherer of crude vegetable drugs may introduce into his bundle enough of another similar plant to enable him to make a profit out of his sales to the wholesaler, who bids him down to the lowest figures, and that this wholesaler also desires to make as much as possible out of his purchase, and finally that the retailer wishes to buy as cheap and sell as high as he can, there are other factors even more difficult of control to be contended with. These are that many medicinal plants only contain their greatest activity if gathered at a certain time of growth, or certain parts only contain medicinal powers when in a certain state. Thus the flower spikes of the male and impregnated female cannabis indica plant are without medicinal value, whereas those of the unimpregnated plant are valuable. Much of the former could be placed in a bale of the dried drug and even an expert would not detect it. Again, medicinal plants are like vegetables that we use for food in this, namely, that they grow well or badly according to the soil, moisture, sunlight and temperature surrounding them, and contain much or little medicinal principle according to whether they are favorably placed. The nux vomica beans apparently perfect in their development may vary over 50 per cent. in their contents or alkaloid and so may all of the important drugs that we employ in pressing cases. That our view of the value of certain drugs is often distorted by such natural variations is an undoubted fact, and not only do our patients and our reputations suffer when a drug fails, but we fail to prescribe that drug in the next case which really needs it because we are disgusted at its failure, when in reality our idea as to its need by the patient was correct, but the sample we employed was faulty. A very good instance of this has come to our attention in connection with *Apocynum cannabinum* which often seemed uncertain and of little value. Recently however, it has become clear that the fault lay with the fact, that owing to an error, *Apocynum androsemefolium* was often supplied to the druggist by the gatherer of so-called *Apocynum cannabinum*. The latter drug is an efficient diuretic and heart tonic, the former is a violent drastic cathartic, if given freely, and is not an efficient diuretic. It is seen, therefore, that drugs may be dispensed for, or by, the physician, which are not what they are called, which are too strong or too weak, or which are impure or stale, and all these faults may be present without the druggist who dispenses them being consciously careless or dishonest. When to these facts we add that wholesale druggists offer for sale different grades of crude drugs at different prices and that the retailer may buy the cheapest if he pleases, it is evident that the physician should exercise some care as to what he prescribes, whether he buys direct from the manufacturer for his own dispensing or has his prescriptions filled by a local pharmacist. But even if the local druggist buys the crude drug at the highest price to get the best, he has no means of determining the quantity of active ingredient in his purchase, which may be powerless even if it looks botanically perfect, and be his process of manipulation never so skilful the product is worthless.

How shall this great element of uncertainty in our treatment of patients be avoided? How long shall we be content to have that which our best judgment dictates seemingly proved faulty by the use of pure drugs instead of poor brains? Recognizing that these possibilities exist, the Committee of Revision of the last Pharmacopeia directed that certain products, as for example nux vomica, should have a known content alkaloid to be determined by assay, and this much having been done it is hoped that the next Committee will go further, owing to the advances made in chemic analysis during this decade.

There are, however, certain drugs which, because of their complex nature or our faulty technic, can not be

tested satisfactorily by chemic means, and as ill fortune will have it, nearly all of these are powerful remedies, poisonous in overdose and depended upon in emergencies by every one of us. The chief ones are digitalis, strophanthus, ergot and cannabis indica. Digitalis leaves vary greatly in their medicinal content totally and in respect to each principle. Thus one set of leaves may contain a large amount of one principle, thereby producing a dominant physiologic effect and another set containing another principle produce still another influence. It will be recalled that digitalis contains at least five principles, of which four are physiologically active and the fifth inactive. From these there may be developed other substances by chemic alterations or by decomposition, but they probably are not primarily present. Each of these ingredients possesses a physiologic action of its own, and each has a solubility of its own. Of the four constituents, digitalin, digitoxin and digitalein act upon the heart muscle, while digitonin has an entirely different effect, namely, the power of depressing the vagus nerves centrically and peripherally and the inhibitory ganglia in the heart. The digitalin here referred to is not the digitalin of amorphous form prepared according to the process of HOMOLLE, nor the crystalline digitalin of NATIVELLE, neither of which is a pure digitalin, but it is the digitalin of SCHMIEDEBERG.

The effect of SCHMIEDEBERG'S digitalin upon the heart is that of a powerful stimulant, for under its influence the individual heart-beats become more powerful (four to six times greater than normal), and it simultaneously causes a rise of blood-pressure, first by increasing the strength of the heart, and second by stimulating the centric and peripheral vasomotor apparatus.

The physiologic effects of digitalein and digitoxin are identic with those of digitalin, except that they do not stimulate the vasomotor center nor the pneumogastric apparatus, and so do not directly raise blood-pressure or slow the heart. In other words, they increase the force of ventricular contraction. The effect of digitoxin being to depress the vagus nerves, it will be seen at once that it antagonizes the vagal effect of the digitalin on these fibers and so prevents digitalis from slowing the heart to the extent that would result from the use of digitalin alone. It also depresses the heart muscle. The proportion of digitonin in digitalis varies, but it is not present in sufficient amount to entirely overcome the inhibitory influence of the digitalin.

If we now turn to a consideration of the solubilities of these principles we can readily explain the different effects produced by the infusion and tincture or fluid extract. Digitonin is soluble in water, as is digitalein, but digitalin is only slightly soluble, and digitoxin is scarcely soluble in water at all. As a result the use of the infusion in a case of heart disease would not give the patient the same degree of cardiac power as the use of the tincture, for not only would the most powerful stimulant of all to the heart, vasomotor system, and vagi be present in small amount, but in addition the large proportion of digitonin would antidote it.

On the other hand, digitonin is sparingly soluble in alcohol, while digitalin and digitalein are readily soluble in it, digitoxin being slightly so. It would seem therefore that in the presence of a failing heart and circulation the tincture or the fluid extract are the preparations greatly to be preferred to the infusion, because they contain large amounts of the active stimulant ingredients.

The reason that the infusion acts efficiently in some cases as a diuretic probably depends upon the fact that as it does not contain as much digitalin it is less apt to cause spasm of the renal vessels, but if the heart is feeble and there is renal stasis, the tincture is probably the better preparation to overcome this state, because it both aids the heart, and by contracting the renal vessels, overcomes the stasis. The use of digitalin is inadvisable unless we are sure that we get that made according to the process of SCHMIEDEBERG, for the other digitalins usually sold are very uncertain. The infusion is far more apt to disorder the stomach than the fluid extract or tincture, because of the irritating digitonin.

A very different physiologic effect, therefore, will follow the use of one sample of digitalis to that of another, even if both be tinctures, and if we vary the pharmacopoeial product, an infusion will give different results than a tincture. It is better, therefore, to use the same product in every case when we wish to maintain an effect, and better to use a product the activity of which has been tested chemically, or physiologically when chemistry fails us, as it does in this case, for digitalis can not be satisfactorily assayed. That is, we should use a preparation in which its principles are so balanced that it is capable of producing a normal physiologic effect. Such a physiologically tested product is now marketed, and even if the crude drug vary greatly, by this means the physician finds in his hands a fluid extract of digitalis which has the same physiologic action when he buys it in 1899 as did the sample he bought in 1897. So with strophanthus. HOUGHTON has recently pointed out in the JOURNAL that a physiologic test is essential to determine its real value, and that without such tests one pharmaceutic product may contain much more strophanthin than another, and that as strophanthin is twelve times as poisonous as absolute hydrocyanic acid, such variations are to be avoided. Again, ergot varies in its crude state, from a worthless product to a powerful one, and in such instance may be apparently perfect. It is a drug which can not be chemically essayed within practical lines, and, therefore, must be tested physiologically.

AURAL AFFECTIONS IN BRIGHT'S DISEASE.

Complications on the part of the visual apparatus in acute and chronic nephritis are not unusual, and that such do occur is well recognized by physicians in all parts of the world. That complications on the part of the ear are almost as universal—according to DIEULAFOY approximating 50 per cent.—is probably not so well known. Ocular and aural affections may often coexist in the same nephritic subject, though the disturbance in either may be entirely functional; that is to say, without *appreciable* lesions. In the eye, an amblyopia in a nephritic, without apparent gross lesions, has long been recognized. In the ear, a loss of hearing may supervene in a similar manner, though usually accompanied by tinnitus. According to MORF (*Archives of Otology*, Oct. 8, 1898), there are two distinct classes of aural complications occurring in nephritis. In the first there are always easily recognizable pathologic lesions, "macroscopic, microscopic, or revealed by the functional examination;" the second class contains those frequent cases in which there is functional disturbance, but no apparent pathologic change to account for the symptoms. All who have devoted considerable study to internal medicine will recall the sudden deafness usually affecting their uremic patients, and at that, in the early stages previous to their relapsing into unconsciousness; they will also probably recall that these patients often complained of the most violent tinnitus, the noises in the head being almost unbearable. Various theories have been brought forward to account for this condition of affairs: that of FIELD, the theory of increased arterial pressure exerting a paralyzing influence on the sound-receiving filaments of the cochlea, becomes untenable when we reflect upon the numerous cases, though perhaps with hypertrophy of the left side of the heart, certainly with a weakened cardiac force. The theory of ROSENSTEIN is more happy. The latter thinks that the symptoms are entirely dependent upon edema of the brain. We are all familiar with the excessive amount of fluid present within the skull cap of patients whose death has occurred in uremic coma. What more plausible than that the cranial nerves are buried in exudative fluid and that this very fluid in one place stimulates the nerve filaments, causing tinnitus or exaggeration of function, in another paralyzes their action, causing complete abolition of function or, in other words, non-conveyance of sound.

As to the form of nephritis in which this condition occurs, it is usually of the chronic interstitial variety, chronic parenchymatous nephritis ranking next, while acute nephritis, according to statistics, appears to play a rather unimportant rôle, though it must not be forgotten that the usual seriousness of the latter variety would interfere with the attending physician spending much time upon a symptom that would not materially aid him.

Deafness may intervene at any stage of the disease, though an increase in the severity of the nephritis is usually followed by a corresponding intensity of the auditory symptoms. Here, too, subjective symptoms in the way of noises of all kinds are particularly liable to occur. On the other hand, when we are able to favorably influence the progress of the kidney disease, we are likewise conferring a respite on the aural apparatus. The otitis occurring in scarlet fever is sometimes dependent upon concomitant nephritis for its prognosis, for it has not infrequently been noted that a persistence of the symptoms of renal destruction, as shown by the microscopic examination of the urine, is accompanied by a continual and increased flow of pus from the ear. Whether there is some connection between the kidney and the auditory apparatus, or whether the general debility of the patient from his nephritis is the cause of the continuation of the aural trouble, is impossible to state. The practical significance of this nephritic deafness, as it may not improperly be called, is that a persistence of ear symptoms or of aural organic lesions without apparent cause should lead us to a careful examination of the urine, with perhaps discovery of the more harmful disease.

LITIGATION SYMPTOMS AND DISEASES.

There are grave doubts as to the accuracy of these terms, so freely talked about in the court rooms and among physicians who appear as witnesses in court trials. Stories of grave neurotic diseases which have rapidly recovered after a court decision in their favor. are common, but when examined, appear very different. Many symptoms which appear more prominent before the issue of a damage suit and afterward are seen to subside, are not always real, but only superficial semblances of hysteric states of depression and elation. A famous trial in which large damages were awarded was followed by the apparent recovery of the patient. In an equally famous case the collection of a large sum was followed by an increase of all the symptoms and death. The former was commented on very publicly as an example of a fictitious case; the latter passed without comment. The former case, after a year, relapsed, and is now a paralytic. It is no doubt possible for a neurotic to exhibit many exaggerated symptoms of disease, but the modern neurologist, with time and opportunity, is able to make an accurate diagnosis that is reasonably correct

The class of men and women who become litigants for damages for injuries are usually neurotics who can be classified in the following groups: 1. A class who are possessed of an emotional nature which demands sympathy and attention from others. Diseases, injuries and derangements of the body are magnified, particularly when this creates interest from others. They take pleasure in becoming the centers of exacting attention, care, and sympathetic comment. The more they can be prominent by commiseration, the

longer the symptoms continue; without notice or care, many of the symptoms subside. 2. A second class have a constitutional dread of pain and fear of death, and are filled with a half-conscious alarm at every symptom of disease and injury. They are pessimists, who fear the worst results from every derangement or injury. They are always intensely depressed and are very susceptible to suggestion of disease. 3. A third class have an abnormal equilibrium, reflecting every condition of the surroundings, associated with a low reasoning mania, which seeks to take advantage of the conditions that appeal to their selfishness and vanity. The gravity of their condition appears or disappears with the surroundings. Predisposing states exist from heredity and defective culture, growth, and conditions of living, which come into activity from injury or disease.

These cases appear in court for damages, claiming injuries, disabilities, and all forms of diseases, due to some specific cause or causes. To the ordinary man the symptoms are clear, but when examined carefully and critically, grave faults and inconsistencies appear. Certain symptoms are changeable, confused, and due largely to some unknown psychic element. The result of the trial may or may not cause a change in these symptoms. The symptoms during or preceding the trial may be traceable to suggestion from the physicians and counsel, or may be influenced by some dominant idea not expressed by the patient.

The more these disputed classes are studied, the more clearly the physical conditions appear. Recently a noted trial brought out conflicting testimony on both sides. The claim for damage was sustained, and the symptoms disappeared. Two months later they returned in more complicated form and ended in death.

In a review of this case, an eminent medical man said that the symptoms of every case would be materially altered where the issue depended on legal proceedings. He also asserted that it was impossible for a normal healthy man to work up a fraudulent case and secure damages in court on the testimony of critic, honest medical men. No one could "work up a case" to the extent of deceiving the physician who was a good diagnostician. Neuropaths and neurasthenics undoubtedly can and do exhibit an array of most puzzling symptoms in some cases, but the history of these always throws much light on the anterior state. The element of personal equation is always a factor in neurotics; this, with suggestion, is to be considered in all cases in dispute. There seems to be no reason for calling these symptoms by any special name, as they are seen in every condition of life, and just now are in strong evidence in the bitter comments on the failures of physicians in the late war. During the past year several very excellent studies of these litigation diseases and symptoms, so-called, have been made by Dr. JACOBY,[1] Dr. PRINCE,[2] and also Dr. PUTNAM.[3] Other papers have appeared on the same field, and it is evident that a new and most valuable literature is beginning to appear.

MILITARY SANITATION IN MANILA, P. I.

Through the courtesy of Surgeon-General STERNBERG we have been permitted to see reports recently received from Lieut.-Col. HENRY LIPPINCOTT, chief surgeon, Eighth Army Corps, and from some of his subordinate officers at Manila, which show the conditions affecting the large body of our troops on duty at that station. The filth and insanitary surroundings of the native population in every locality from which reports have been received stand out prominently as the first subjects for consideration and practical work on the part of medical officers serving with our troops. When General SHAFTER'S command effected its landing at Daiquiri, Cuba, one of the first sanitary requirements involved the destruction of Siboney on account of its filth and probable infection. The active measures adopted by Dr. LEONARD WOOD, the major-general of Volunteers now in military command at Santiago, Cuba, for the regeneration of the city, have been reported from time to time in the press dispatches. When General MILES' expedition occupied Ponce in Porto Rico one of his first acts was to establish a sanitary government for the city, under the supervision of Major J. McG. WOODBURY, chief surgeon of Volunteers, who convened a meeting of the local physicians, organized a board of health, caused a vigorous cleaning up of the streets and alleyways, improved the water-supply, broke ground for a new cemetery and instituted proceedings for the suppression of smallpox.

From Manila come reports of a similar character. The various buildings in that city are described as constantly permeated with an offensive odor, as the water-closets are often merely holes in the sewer-pipes, in some cases without even as much as a seat over them. The water-supply is filthy and dangerous to the extent that fecal matter has been discovered in it. Questions of municipal sanitation are meeting our medical officers at every turn, and that these officers deal with them so efficiently speaks highly for their training. The trained military sanitarian makes an excellent municipal health officer. We do not forget that thirty years ago the men who devoted their energies to the establishment of State and local boards of health in this country were mostly men who had served during the Civil War as medical directors of corps and surgeons-in-chief of divisions. A Board of Health for the city of Manila was appointed September 29, by military authority. This board was required to draw up and submit for approval such regulations

[1] On Suggestive Therapeutics.

[2] On the Pathology, Genesis and Development of the Most Important Symptoms in Traumatic Hysteria and Neurasthenia.

[3] On the Etiology and Pathogenesis of the Post-Traumatic Psychoses and Neuroses.

as would secure for the city a good sanitary condition and protect it against the introduction of contagious and infectious diseases by persons entering the port. The city was divided into ten districts, to each of which a duly qualified physician was assigned to provide medical attendance to the sick poor and to secure a closer watch against endemic and infectious diseases. Qualified midwives were also appointed in these districts for assistance to the needy, free of charge. No interment is now allowed without a permit from the Board of Health. The work done under the orders of this Board has already exercised a notable influence on the insanitary conditions of Manila.

The commission investigating the conduct of the war with Spain has had few witnesses from the far East before it, and affairs at Manila have not received that general publicity which has been given to those that occurred nearer home, but the reports which we publish this week give full information on the subject.

CORRESPONDENCE.

Hereditary Paralysis Agitans Cured (?) by Nasal Treatment.

MINNEAPOLIS, MINN., Dec. 26, 1898.

To the Editor:—Mr. O. H. P., 34 years of age, a very intelligent mechanic, consulted me June 9, 1892, complaining that he had developed in connection with a series of severe colds in the head, a hereditary tendency to shaking of the head. Mr. P. is a man of fine physique and in good general health, which has continued to the present writing, six and a half years. The family history is as follows: His mother died of internal cancer, in her 63d year. His two brothers, his father, two paternal uncles and four paternal aunts (with one or two exceptions), his great-grandfather and the latter's brothers and sisters (with one or two exceptions), farther back he has no knowledge, all began to shake between the ages of 30 and 40 years. One sister of Mr. P. had temporary relief for about one year, following treatment by baths at Messina Springs. The cases are all said to have had "shaking of the head, hands and voice."

My patient's head was turned to the left and was in constant but slight motion. Examination of the nares revealed hypertrophic rhinitis, a small anterior septal spur of the right side and a large cystic development of the left anterior middle turbinate. This growth was removed by snare, June 11, leaving a part of the cyst. A week later the head of the right middle turbinate, which was enlarged and pressed upon the septum, was removed. July 16 I removed, with snare and curette, polypoid masses which had developed in the stump of the left middle turbinate. August 6 and 13 I galvano cauterized the stump of the left middle turbinate. This had smoothly healed September 17, but as there was still pressure against the septum, the inner aspect of the stump was cauterized. From the date of this cauterization a marked improvement was noticed as regards the shaking, which in a few weeks entirely disappeared.

There was no recurrence of the trouble until January, 1897, a period of four years, when he returned with the statement that his head had been shaking again for the past two or three weeks. I found the stump of the anterior left middle turbinate pressing upon the septum. This was relieved by snaring the offending stump, after which the shaking soon disappeared and has not recurred. EDWARD J. BROWN, M.D.

Are there Causes for Criticism in the Sanitary Management of the Late War?

TECUMSEH, MICH., Dec. 12, 1898.

To the Editor:—That there are good grounds for criticising the sanitary management of military camps there is every reason to believe, but when one reads the editorial article in last week's JOURNAL (Dec. 10, 1888, p. 1425) comparing the sickness of the British Soudan forces with our own, he certainly finds the field of comparison a narrow one, because the elements for comparison scarcely exist.

The principal fault found has not been so much from mismanagement of field-hospitals, either before a battle or immediately after, but from the gross mismanagement of the sanitary conditions of the soldiers in camp. Camp Thomas, Chickamauga was a veritable pesthole. Soldiers returning home on furlough bore the appearance of those who were so happy as to make their escape from Old Libby or Andersonville prisons of thirty-five years ago.

The fault was not with Surgeon-General Sternberg, nor the medical men under him, but with the antiquated machinery which permitted pot-house politicians to appoint as officers men who knew very little about protecting soldiers from disease, and in many instances apparently cared less.

Probably no better condition than the military camp exists for the exercise of that eternal vigilance which will exclude preventable diseases from camp life, and when they do break out in camp, "to move on," as was frequently done by Hannibal in the Second Punic War over two thousand years ago. To allow soldiers to become emaciated and unfit for duty by supplying them with indigestible food and drinking water contaminated with their own excreta, which produced camp diarrhea, dysentery and typhoid fever—diseases which so generally prevailed in Camp Thomas, Chickamauga—shows very clearly that there was bad management somewhere.

When a writer compares the management of our forces in the field with the march of Kitchener to Khartoum, he will find that only in one instance is there any similarity. Kitchener and his soldiers built nearly a thousand miles of railroad, and laid the same length of telegraph wires, navigated a river which runs through a desert, fought the most heroic savages in the world, frequently marched and fought battles in a temperature of 120 degrees, all with an army of only 25,000 men. The reader will very readily perceive that typhoid fever did not prevail in the march down the Nile, but when sanitary restrictions began to relax, preventable diseases manifested themselves. The only comparison to be made between the forces of Kitchener and our own is that insanitary conditions in both instances produced like results.

J. F. JENKINS, M.D.

Whither are We Tending?

OWATONNA, MINN., Dec. 13, 1898.

To the Editor:—Apropos of the commission evil, which is being discussed in the JOURNAL, I can not resist the inclination to say a few words upon this and other evils that pervade the profession.

Undoubtedly, there is not a State in the Union that is not infected with the commission evil to a greater or less extent. It may be accounted for in various ways, the principal of which is the overcrowding of the profession everywhere and the consequent scramble for business by many of its members.

Probably there are always men in every profession who will stoop to such practices for money, but this is peculiarly true of the medical fraternity. Nor is this the limit to the sacrifice of honor and dignity which the profession is daily making. We have men in the profession who personally go on the street and solicit business. Only a short time ago, I saw the wife of a reputable (supposed) physician collar a boy with a dirty rag on his throat and steer him to her husband's office. When

that same woman hears of a woman who is pregnant she coaches her and uses her utmost endeavors to inveigle her to employ her husband. This same man advertises his confinement cases in the secular press after they have occurred.

Physicians even prostitute the church for the furtherance of their interests. Not long ago two ladies joined a certain church. At the instance of a physician who was a member of that church, the pastor called upon these ladies within a week after their reception into the church and requested them to employ the above-mentioned physician, though they assured the pastor that they were well satisfied with their present medical attendant, who had borne that relation to them for the last twenty-five years.

Neither are the features thus far enumerated the only evils that have taken possession of the profession. How often do we commence the perusal of an article in some reputable medical journal by a physician who has a high standing in the profession, only to find that the said article, instead of being devoted to the advancement of medical science, is written to extol the virtues of some proprietary article, or in the interests of some manufacturing firm. It is needless to mention the fee that he gets for this article, or the elasticity of his conscience, though the act does detract from the standing of the entire profession. Nor is the medical press immune to this disease. As every intelligent physician is supposed to read, it is entirely unnecessary to mention the different ways in which it is perverted.

These lines are not written in a spirit of querulousness, but every physician engaged in active practice knows that they are facts that can not be gainsaid. Admitting this to be true, the caption at the head of this article naturally presents itself. If this disease which infects the profession is not already malignant, it will soon become so—provided it continues. Is there a remedy? Would it not be of profit to the AMERICAN MEDICAL ASSOCIATION at its next session to direct a little of the force it expends upon scientific papers in the direction of the correction of these evils? THEO. L. HATCH, M.D.

Incarceration of the Penis.

LEAD, S. D., Dec. 29, 1898.

To the Editor:—The five-year-old son of P. G. recently awakened suddenly and began crying as if in severe pain. An examination by his mother failed to reveal any cause, but he continued to suffer and two or three days later, while giving a bath, the mother found the penis greatly swollen and brought the boy to the hospital, when examination revealed a badly swollen penis, about the size of an adult's in a flaccid condition, with very edematous prepuce, uniform in size, but at the base of the penis a fissure involving the entire circumference of the penis and just behind this fissure an absence of swelling. By opening this fissure I found a small black cotton thread deeply imbedded, and which had cut nearly through the corpora spongiosum and almost into the urethra. The pressure had caused some cyanosis of the organ. It was impossible to learn how long the thread had been there, but after its removal the organ rapidly assumed its normal condition.

HERMAN S. JUDD, M.D.

Home Treatment of Chronic Morphinism.

CLEVELAND, OHIO, Dec. 26, 1898.

To the Editor:—I notice an article on page 1423 of the JOURNAL (Dec. 10, 1898) on the above title. I am somewhat at a loss to understand whether the item was published for the sake of condemning the method or not. I think that it must have that effect on the profession and am sure that it will have on the habitue. Any method of treatment that is of itself cruel enough to torture patients to the extent of driving nearly per cent. of them to suicide within three days of the time of commencing it, should be classed with the cruelties of Nero rather than as belonging to modern medicine.

I have treated thirty cases of chronic morphinism in the past year, some of them taking as much as 40 grains per day hypodermically (I never refuse a patient because of the amount taken), and have not failed to make a cure in any single case. I have had no suicides or attempts at suicide. I have never found it necessary to employ more than one nurse for ten patients, but do find that I must have the patients at my institution. I have devoted my entire time to the treatment of this class of cases for the past six years and have never found a case that I could not cure, provided he wanted to be cured, and that without extreme suffering. Most patients do not suffer at all. Some of them have told me they felt better from the time they commenced treatment until they were cured than while themselves taking the morphin.

I will be glad to explain my methods to any physician who may be interested. A. J. PRESSEY, M.D.

Lepra Bacilli Found in the Brain.

NEW YORK, Dec. 23, 1898.

To the Editor:—Hansen said the brain is never affected by leprosy. Dr. C. Brutzer (*St. Petersburg Med. Woch.*, Oct. 17 and 19, 1898, No. 42, p. 363), reports ten autopsies of lepers who had died in the leprosery of Riga, and in four of these cases there were adhesions between the dura mater and the brain; in three of these four cases of adherent meningitis, he found lepra bacilli *au niveau de la glande pituitaire*. Evidently Hanson is wrong in his opinion that "the brain is never affected by leprosy." ALBERT S. ASHMEAD, M.D.

SOCIETY NEWS.

Chicago Pathological Society.—The second annual address before this Society was delivered by W. T. Councilman, M.D., professor of pathology in Harvard Medical School, Wednesday evening, Dec. 28, 1898, on the subject of "Inflammatory Processes Illustrated in Acute Inflammation of the Cornea."

N. Y. Academy of Medicine.—At the meeting, Dec. 15, 1898, the following officers were elected: President, William H. Thomson; vice-president, Herman Knapp; trustee, E. G. Janeway; treasurer, for the trustees, W. F. Cushman; member of committee on admissions, Reginald H. Sayre, and member of library committee, A. Caillé.

An International Congress.—The ninth international Congress against the Abuse of Alcohol, to be held in Paris, April 4 to 6, 1899, has appointed Dr. T. D. Crothers of Hartford, Conn., foreign coresponding secretary. This Congress is presided over by Dr. Legrain, an eminent specialist, and superintendent of the Asylum of the Seine for Mental Diseases. The preliminary program gives the names of several of the most prominent medical men of Europe as readers of papers on the scientific side of the drink problem.

Philadelphia Pathological Society.—At the last meeting of this society the following program was carried out: Dr. A. Ferree Witmer spoke on "A Study in Involution"; Dr. J. H. Johnson, on "Fistula of Appendix Following an Appendicial Abscess"; Drs. Sailer and Greisinger presented "Specimens From a Case of Typhoid Fever"; Dr. David Riesman spoke on "Hemorrhagic Infarction of the Mesentery and Intestine," also "Varicose Veins of Esophagus"; and Dr. W. E. Hughes, on "Aneurysm of Thoracic Aorta."

Philadelphia Pharmaceutical Society.—At the last meeting of this society, Mr. William Thompson read a paper on "Some Observations on Abstracts in Comparison with Fluid Extracts," in which he did not favor the use of the former until further clinical experiments had been made. Dr. Lyman Kebler spoke

on "The Physical and Chemical Properties of Lithium Benzoate and Lithium Salicylate." Mr. Thomas S. Wiegand spoke of "Specific Gravity." The speaker referred to the claims of Mr. Simons of London, who, it was thought, had devised a method for taking specific gravity, but which honor should be given to Dr. Robert Hare, professor of chemistry at the University of Pennsylvania in the year 1828. Specimens of saffron were exhibited which were grown in Pennsylvania.

Western Surgical and Gynecological Association.—The eighth annual meeting of this Association convened at Omaha, Dec. 28, 1898, for a two days' session. About 150 of the leading surgeons of the trans-Mississippi country were in attendance. The convention was called to order at 10 o'clock by the president, Dr. D. S. Fairchild, of Clinton, Iowa. After the welcoming speeches the president read an address on "A Review of Some Surgical and Gynecologic Problems." Other papers read were: "Is Asepsis to Be Preferred to Antisepsis?" C. E. Stoner, Des Moines, Iowa; "Surgical Delirium," J. J. McCone, Tacoma, Wash.; "Treatment of Burns," W. D. Otis, Fort Morgan, Col. Among others who read papers were; Franklin H. Martin, Chicago; J. H. Kellogg, Battle Creek, Mich.; T. A. Stoddard, Pueblo, Col.; M. H. Everett, Lincoln, Neb.; William Jepson, Sioux City, Iowa; J. E. Moore, Minneapolis, Minn.; J. H. Van Eman, Kansas City, Mo., and O. Beverly Campbell, St. Joseph, Mo.

BOOK NOTICES.

Transactions of the Medical Society of New Jersey. 1898. Cloth. Pp. 481. Illustrated. Newark, N. J.: L. J. Hardman. 1898.

This volume contains the proceedings of the one hundred and thirty-second annual meeting, held at Albany Park, N. J., June 28-30, 1898, with papers on the following subjects: "External Esophagotomy," "Case of Lumbar Nephrectomy," "Foreign Body in the Bronchi," "Milk as a Food and as a Means of Contagion," "Milk," "The Umbilic Cord," "Uterine Displacement," "School Hygiene with reference to Production of Ocular Disease," "Regression vs. Progression, Viewing the General Practitioner from a Scientific Standpoint"; "Chronic Cardiac Disease and its Management," "Dangers of Certain Faulty Impressions Regarding the Menopause," "Early Diagnosis of Pott's Disease," "Recent Advances in the Normal and Pathologic Histology of Central Nervous System." There are also papers on the progress of bacteriology, surgery, public hygiene, ophthalmology and otology, and diseases of nose and throat.

Medical News Pocket Formulary for 1899. By E. Quin Thornton, M.D., Philadelphia. Leather. Pp. 272. Philadelphia and New York: Lea Brothers & Co. 1899. Price, $1.50 net.

In this pocket formulary the diseases are arranged alphabetically, and under each the author has grouped various prescriptions for both simple and complicated cases, with notes as to the indications, etc. Both the ordinary and metric systems are given in the prescriptions, which number 1600.

Proceedings of Thirteenth Annual Meeting of Conference of State and Provincial Boards of Health of North America. Paper. Pp. 125. Indianapolis, Ind.; Sentinel Printing Co. 1878.

These proceedings have to do with the conference held at Detroit, Mich., Aug. 10, 1898, and comprise the various papers and addresses presented at that session.

Report of State Board of Health and Vital Statistics of Pennsylvania. Cloth. Pp. 1110, 2 vols. Wm. Stanley Ray, State Printer, 1898.

This report, the thirteenth annual, is for the year 1897. Part I contains report and minutes; Part II contains appendices, which deal with various subjects, including various legislative acts, reports, etc. The contents is well arranged and the entire report is a credit to Pennsylvania's State Board of Health.

NECROLOGY.

Mark H. Lincoln, M.D., University of Pennsylvania, 1885, died in Philadelphia, Pa., Nov. 26, 1898.

John Stillwell Schanck, M.D., University of Pennsylvania, 1843, of Princeton, N. J., died Dec, 16, 1898, in his 81st year.

C. Holmes McNeil, M.D., who had been a member of the Jersey City (N. J.) Board of Health for three terms, died in that city, of cardiac disease, Dec. 18, 1898.

Robert Barfe Baisley, M.D., New York College Physicans and Surgeons, N. Y., 1842, died at his home in East Rockway, N. Y., Dec. 17, 1898. He was medical superintendent of the Kings County (N. Y.) Lunatic Asylum from May 8, 1855, to May 8, 1857.

John B. Vandergriff, M.D., University of Louisiana, 1846, of New Orleans, President of Board, United States Examining Surgeon of Pensions, and at one time medical director, G. A. R., Department Louisiana and Mississippi, died November 4, aged 71 years.

William A. Varian, M.D., New York University, 1846, died in Kingsbridge, New York City, where he had long lived, December 23. For many years practically retired, he was remembered as having been a police surgeon and at one time quite active in political circles.

Frank Archer Bottome, M.D., College of Physicians and Surgeons, New York, died at his home in New York December 20. He was born in Bridgeport, Conn., in 1865, and at the time of his death was connected with the clinic of nose and throat diseases at Roosevelt Hospital. Enthusiastically devoted to his profession, he was entering upon a most promising career.

Kemp B. Batchelor, M.D., Baltimore, Md., Dec. 24, 1898, aged 32 years.—James Ford, M.D., Wabash, Ind., Dec. 30, 1898.—Irving Fred Graves, M.D., Nashua, N. H., Dec. 15, 1898, aged 32 years.—E. H. Hyatt, M.D., Delaware, Ohio, Dec. 24, 1898, aged 71 years.—Martin C. Kelly, M.D., Mt. Clemens Mich., Dec. 23, 1898.—William Meyer, M.D., Cleveland, Ohio, Dec. 21, 1898, aged 78 years.—Sumner A. Patton, M.D., Skowhegan, Maine, Dec. 19, 1898, aged 78 years.—James H. Ricks, M.D., Bolton, Tenn, Dec. 9, 1898, aged 28 years.—William Schorse, M.D., Milwaukee, Wis., Dec. 11, 1898.—D. F. Shea, M.D., Franklin, Mass., Dec. 22, 1898, aged 31 years.—John Sheets, M.D., Philadelphia, Pa., Dec. 26, 1898.—Vernon L. Todd, M.D., Kansas City, Kan., Dec. 22, 1898, aged 31 years.—James E. Whiteford, M.D., Baltimore, Md., Dec. 20, 1898, aged 50 years.

PUBLIC HEALTH.

The Plague at Madagascar.—The *Semaine Med.* (December 7) states that it is officially announced that the plague has broken out at Tamatave and the surrounding villages. It is supposed that it was imported from India "where the government, for political reasons, has ceased the sanitary measures adopted at first."

Campaign Against Charlatanry.—A committee has been appointed by the *Aerztekammer* of Brandenburg and Berlin to devise measures to educate the public to the dangers of consulting quacks, and the benefit to be derived from scientific medical attendance. The committee offers a prize of 300 marks for the best pamphlet on the subject by a physician of Germany, which is to be distributed broadcast among all classes of society. Schwalbe and Eulenburg are among the ten members of the committee.

The New French Sanitary Matches.—The substance employed is neither white nor red phosphorus, but the sesquisulphid, manufactured according to a process invented by Sevène and Cahen, The sesquisulphid takes fire at 95 degrees C., white sulphur at

60 degrees and red at 260. The pastes made with this substance are not phosphorescent, and emit no fumes nor smoke during the manipulations. It has been tested on guinea-pigs, which tolerate a dose of three centigrams a day, while they rapidly succumb to three milligrams of white phosphorus.—*Progrès Med.*, December 10.

Eyesight of Railroad Employes.—Dr. Ricchi of Florence stated at the Brussels International Congress, 1897, that the Italian railroads require of their employes both eyes normal in regard to visual acuity, ocular refraction, perception of red and green and visual field. They are re-examined when they are 45 years of age, when they have been injured or affected with a serious cerebral or infective disease, when they are addicted to the use of tobacco or liquor, or merely suspected of diminished visual faculty. The Monoyer scale, Donder's and Holmgren's are the tests used. Nuel advocates re-examination every five years and after every accident, including all the employes on the train and those responsible for that portion of the track. Bickerton remarked that the eyes of candidates for the British navy are not tested until they have been in the service for some years, and then not by a medical man. Beaumont added that the standard exacted by the English railroads of their employes is only one quarter of the normal eyesight in the best eye. Parliament is powerless to interfere, as eighty members of the House of Commons are directors of railroads and oppose any reform on account of the expense.—*Rev. Gen. d'Ophthal*, November 30.

Sanitary Advantages of Automobile Carriages.—In the annual report of the licensing of public carriages which had just been issued by Sir Edward Bradford, commissioner of police in London, there are some interesting statements regarding the progress made by motor carriages for hire. He hopes to find in motor carriages one of the main factors in solving the problem of the congestion in the London thoroughfares. He says: Should electric carriages come generally into use, the effect on the traffic of the metropolis will be marked, as such vehicles occupy but a little over one-half the space of that of a similar vehicle drawn by a horse. From a sanitary point of view also, a diminution of the number of horses in the streets is a desideratum. The report points out that the number of carriages is continually increasing. Altogether there are 16,000 public carriages licensed in London, an increase of 872 over the number licensed in the previous year. In Paris, further indications of the gradual substitution of mechanic traction for animal traction are furnished in the statement made by an official of the Compagnie Générale des Petites Voitures to the effect that they have from thirty to forty motor cabs all ready to put into use, but they are delaying bringing them out so that the drivers may become perfectly expert, the more so as the streets are at present in a condition which renders driving very difficult.—*Public Health.*

Military Sanitation in Manila.—The following is a report by Lieut.-Col. Henry Lippincott, U. S. A., of date Oct. 23, 1898; also a report by Major Samuel O. L. Potter, Second Brigade, Second Division, Eighth Army Corps:

Since the date of my last report, Aug. 31, 1898, I have the honor to inform you that the troops of this command have been placed in quarters, and are now fairly well housed. The buildings occupied are dwellings, vacant Spanish barracks and convents, all of which are constructed in a most insanitary manner. Three regiments of infantry, namely, the Twelfth Minnesota and Second Oregon Vols., and the Twenty-third U. S. Infantry, constituting the provost guard, are stationed within the walled city of Manila, and the remainder of the command in the various parts of the unwalled city or suburbs. The command now in the Philippine Islands consists of 15,419 officers and enlisted men, including 393 members of the hospital corps and 9 contract surgeons.

The sanitary surroundings of our troops are necessarily unsatisfactory. In the walled city, and indeed in parts of the outlying districts, the filth of centuries seems to have been allowed to accumulate. No sanitary control has, it appears, ever been attempted over the native population, whose personal habits are anything but cleanly. Just outside the walls that enclose the city is a ditch or moat, which has not been flushed in years, and is now filled with stagnant water, decaying vegetation, etc. The health of the troops can not but be materially affected thereby, and the Second Oregon Vols., who are doing the police duty of the city, have a larger sick report than any other regiment in the command, there being 95 sick in this regiment at the present time.

The sewerage system of the city is in a most insanitary condition. Even in private houses little attempt has been made to properly trap closets and urinals, and as the water-supply is in most cases deficient and the system out of order, the rooms are permeated almost constantly with an offensive odor. In public buildings, like the *Ayuntamiento*, or City Hall, where the headquarters are now located, in military barracks, hospitals, etc., the arrangements are even more unsatisfactory. For the most part, in the hospitals and in nearly all the barracks occupied by our troops, the water-closets are mere holes in the sewer pipes, without, in some cases, even as much as a seat. Large, open cesspools are usually placed in connection with the buildings and are in many instances exceedingly filthy. Many of them have been filled in with earth and lime since our arrival here.

A board of health has been organized for the City of Manila, with Major Frank S. Bourns, chief surgeon U. S. Vols., as president, Capt. C. L. Mullins, asst.-surgeon First Nebraska Vol. Infantry, in charge of the marine branch, and Dr. Charles McQuesten, acting asst.-surgeon U. S. A., as general assistant. A department of sanitation has also been established in connection with the Provost Marshal-General's office, with Capt. Lea Febiger, Twenty-third U. S. Infantry, in charge, and these two bodies, working in absolute harmony, have done much toward cleaning and freeing the city of its accumulated filth, and thus indirectly improving the sanitary surroundings of our troops. The sewerage system of the city, and especially that part of it connected with barracks and hospitals, requiring, as it does, a complete overhauling, could not, of course, be much improved in so short a time and without the expenditure of a considerable sum of money; but something has been done and is still doing in that direction. Where the closets can not be flushed, on account of not being connected with the water-supply, or because of a deficient supply—and this holds good in many cases—they have been closed, and latrines dug instead. In some cases dry-earth closets have been provided, and the chief quartermaster of the command has just made arrangements with a Chinaman comprador to have these cleaned out and emptied once a day. When these arrangements are perfected, it is believed that our sanitary condition will be much improved.

There is a water-supply system for Manila and its suburbs, and the usual distributing pipes, all, however, in bad order. The condition of the water indicates that there is not complete isolation from the sewerage system, for fecal matter has been discovered therein. The water from hydrants is, therefore, regarded as exceedingly dangerous, and I have called attention to this matter and urged its importance. With all these warnings, however, men still continue to drink this water unboiled, besides imbibing various noxious fluids sold on the streets and elsewhere by the native population, under the name of "lemonade" or "soda water." This habit of the men accounts to a great extent, I fear, for the prevalence of typhoid fever and dysentery in the command.

Smallpox made its appearance in this command, Sept. 2, 1898, since which date twenty-one cases have occurred, eight of which, I regret to say, have died. There does not appear to be any particular focus of infection, since the disease has occurred in regiments widely separated from each other, but it springs undoubtedly from contact with the native population, among whom smallpox flourishes to a greater or less extent throughout the year. In at least two instances the disease can be traced to native washer women, one of whom was recently discovered fondling her smallpox child with hands still wet with the water used in washing the clothing of some men in the Thirteenth Minnesota Infantry. Then again there is the habit our men have of going into native huts, in total disregard of the consequences, sitting there for hours at a time, eating their contaminated fruit and viands of all description, drinking their infected fluids, and otherwise exposing themselves unnecessarily to smallpox and other infections. Direct contact with the disease and infected clothing are therefore the sources from which our men have become attacked with the disease. It may be stated here that the laundry work of the command has heretofore been done by native women, who do not include boiling as a part of the process of washing, nor do they even

boil the water used for the purpose. To avoid any further danger from this source, I recommended to the Adjutant-General of the Department, October 6, that all washing be done by the enlisted men themselves, and this recommendation is now going into effect. The measures adopted for preventing the spread of the disease consist in the isolation and control of all those found sick, the isolation of our own patients and the disinfection of the quarters, both of natives and of troops, in which the disease occurred. A tent hospital has been established for our own cases, with Capt. A. P. O'Brien, asst surgeon, First California Vol. Infantry, in charge, and the cases now under his care are doing well and will probably recover.

The woodwork of barracks is washed with a solution of corrosive sublimate and the plastered walls of most of them are now being lime-washed. Some days ago I directed the surgeons to ascertain and report the number of men in their commands who required vaccinnation or revaccination, and I telegraphed to the American consul at Yokohama for 3500 hermetically sealed tubes of the best non-humanized vaccin virus. Fifteen hundred of these were shipped from that point, October 4, and arrived October 20, and the remaining 2,000 were shipped October 14, and will probably reach me in the course of ten days or less. With these tubes, each of which contains virus sufficient to vaccinate two or three men, I shall have sufficient to vaccinate all the cases that have been reported to me as requiring it, in order to fully protect the command. I do not fear that an epidemic will break out among our troops, since some 20,000 points of vaccin were issued previous to our sailing from San Francisco, which means that every man in the command was vaccinated or revaccinated before he arrived at Manila. There can be no doubt, however, that isolated cases will appear here and there from time to time, as a different result can hardly be expected in a country where the disease is habitually endemic.

During the week ending September 19, sixty-one cases of typhoid fever developed in the command. The next week there was a slight decline, while since then there has been a gradual rise. In malarial fever the rise has been steady since September 12. The average number of sick from dysentery and diarrhea during the seven weeks ending October 17 was 246 in quarters and hospital. The wounds reported October 17, were nearly all of accidental origin. It will be noted that there has been a gradual rise in the venereal cases, from seventeen on September 5 to 178 on October 17, this notwithstanding the warning contained in the circular of Aug. 27, 1898, from these headquarters. In the total number of sick from all causes there has also been a steady rise from 1032 on September 5, to 1850 on October 16. Our death-rate was rather large in the weeks ending October 3 and 10, owing to the breaking out of smallpox, but the report for October 17 would indicate a slight decline. I may remark that convalescence from all diseases, and especially from typhoid fever and dysentery, is exceedingly slow in this climate on land, and consequently the necessity for a hospital ship is felt. It is surprising what effect five or six days on the water has upon such convalescent patients when otherwise properly cared for. I was informed that the *Scandia* was coming as a hospital ship, but the Board of Medical Officers who examined her find that she is unsuited for the purpose without extensive alterations, which can not be made here and must be done in Hong Kong. I am therefore compelled to keep patients on land, and see convalescents accumulating until the hospitals are filled to overflowing.

The matter of finding sufficient suitable buildings for our hospital patients has been a serious problem during the past four weeks. The Second Division Hospital, referred to in a previous report, has capacity for about 500 patients. As it was becoming very much crowded, it became necessary to erect tents and look elsewhere for hospital accommodation. This was found for a time in the vacant convent building, De La Asuncion, situated on Calle Heran, Manila, in the district of Ermita. This building was impressed for hospital purposes by Special Orders No. 59, from these headquarters. It is a beautiful structure, excellently adapted for hospital purposes, has accommodation for about 250 patients, but is still not sufficient for our needs. I am now endeavoring to find a suitable building on the north side of the Passig River, where by recent orders (G. O. 22) the Second Division is to be quartered. If I succeed in finding a building in that locality, with a capacity of 300 or 400 beds, it will not only be a great convenience to the troops quartered in that part of the city, but will be sufficient, I believe, for present hospital requirements.

During the past month the troops stationed at Cavite were: Headquarters First Division, First Montana Vol. Infantry, Battery G, Sixth U. S. Artillery, and Detachment California Heavy Artillery. By the new arrangement all but the California Heavy Artillery are coming to Manila, and the Eighteenth U. S. Infantry is to take station at Cavite. Upon the establishment of the headquarters of the First Division at Cavite, the hospital there, at first called the Reserve Hospital, was designated the First Division Hospital, and an average of sixty patients has been in this institution during the past month, it being unable to accommodate more comfortably. The building, as already reported, is entirely unsuited for hospital purposes, but is the best that could be found in Cavite. By careful attention to sanitary details and under the able management of Major Warne, surgeon First South Dakota Infantry, the death-rate from typhoid fever has been reduced until at the present time it is about equal to that in the Second Division Hospital in Manila. The ordering of the Eighteenth U. S. Infantry to Cavite will necessitate the retention of this hospital for that regiment.

As to supplies, our present hospitals are provided with everything neeedful for the comfort of the sick. Excellent storage room has been obtained and a supply-depot established, where requisitions are now being filled as they arrive. The supplies brought by Major Corbusier, the acting medical purveyor of the department, on the *Arizona*, and by Major Owen, brigade surgeon, U. S. Vols., on the *Scandia*, will be sufficient to equip the hospital at present, and the supply of medicines, etc., on hand will be enough, I believe, until the arrival of the stores asked for on the requisition forwarded by me to Colonel Middleton, Sept. 12, 1898. However, I will not fail to purchase here or in Hong Kong, should that be necessary.

In conclusion, I may remark, that although Major Owen brought 123 privates with him on the *Scandia*, I am still short of the necessary men to do the necessary work of the hospitals, owing to the fact that many of the men are sick. It has been a most difficult matter to obtain good nurses and attendants' but the men are being instructed and are giving better service as they gain in experience. I am very short of experienced stewards and acting stewards. The acting stewards are all new men, necessarily untrained in hospital work and especially in that part of it pertaining to the preparation of reports and returns, resulting in many errors and blunders, requiring numerous corrections and thus requiring an unnecessary amount of labor upon my office; for it has been my aim to forward to your office reports that may serve in some degree as a record.

Major Potter reports:—This brigade was at first commanded by Gen. F. V. Greene, afterward by Gen. Irving Hale, and consists in part of the Third U. S. Infantry, the First Colorado, First Nebraska and Tenth Pennsylvania Infantry and two batteries of Utah Light Artillery. The brigade went into camp July 18 to 21, at the village of Tambo on the south side of Manila Bay, about four miles from Manila. This camp was afterward designated Camp Dewey, and was occupied by the brigade until August 13, when the advance on Manila occurred. Since then the brigade has been quartered in the Spanish barracks, public buildings and rented houses in the districts and suburbs of Manila, known as Tondo, Binondo, Santa Cruz, San Miguel, Malacanon, San Sebastian and Samploc.

The only marches or journeys made by the command were the daily journeys to and from the trenches, about two miles each way, and the final march into Manila, including the assault on the Spanish works and the skirmishing through Malate and Ermita on August 13, about nine miles for the most active portion of the brigade. On July 29 the insurgent intrenchments north of Camp Dewey were occupied by the brigade, and new trenches dug by our troops about 100 yards in advance of the old ones and extended eastward to the Pasay road. In these trenches occurred all the fighting until the day of the final advance on Manila. On August 13 the brigade advanced upon the Spanish line of works, drove back the enemy and occupied Forts San Antonio, Malate and Ermita. The brigade then advanced over the Pasig River to the northern districts of Tondo and Binondo and the eastern district of Samploc, finally taking station along the northern and eastern fronts of the city, on a line about four miles long, extending from the northern bay shore to Nadtajan on the Pasig, east of Samploc. The distance marched this day was about nine miles for the Colorado regiment and from five to six miles for the other organizations. The United States flag was raised on Fort San Antonio about 11 A.M. of this day by Lieut. A. McD. Brooks, adjutant First Colorado, who had been detailed by General Greene for that duty.

Sanitary Condition of Camp Dewey.—Camp Dewey was located on ground sloping toward the bay shore and composed of sandy soil containing much sub-surface water about eighteen inches below a scanty covering of grass. The camp faced the bay with the kitchens and latrines in the rear. The latter could not be excavated to a greater depth than two feet and required repeated reconstruction. All kitchen waste which

could not be burned was deposited in pits dug for the purpose and covered with dry earth thrice daily. The water used for cooking and drinking was generally obtained from shallow native wells and contained a large amount of organic matter, but was boiled before being used as far as the limited utensils and fuel would allow. New wells were dug by some of the regiments. The troops were quartered in shelter tents raised above the ground on bamboo platforms. The drainage was poor, but the porous soil rapidly absorbed moisture. The health of the troops was generally good in this camp, notwithstanding the daily heavy rains, the scanty supply of firewood and the unsuitability of the army ration to the climate. A mild epidemic of measles occurred in the Colorado regiment, but was soon stamped out by prompt isolation of all suspected cases. The prevailing sickness consisted of digestive disturbances and diarrhea. In the Nebraska regiment there was no infectious or contagious disease except three cases of parotitis, and the total sick and wounded during this time numbered only ten.

From July 29 to August 13 the trenches were occupied by details from the command, made daily, each organization in the brigade doing this duty about every third or fourth day. Each tour of duty comprised a march of about two miles through water-soaked rice fields, twenty-four hours' duty in the trenches and the return march. Hardly a day passed without several severe rainstorms and as the men were in the open air during their entire tour, their clothing was constantly wet, and on their return to camp they would frequently find their remaining clothing and beds saturated with water. The ground in the rear of the trenches became insanitary by the deposit of excreta. Notwithstanding these conditions the health of the command remained good. Boiled water and coffee were furnished to the men, and they were strictly forbidden to drink anything else. Some organizations obtained good rainwater from cisterns in dwelling-houses near the trenches. The percentage of sick in the command at this time varied from three to six in the different organizations.

Conditions in Manila.—After August 13, when the brigade moved into Manila, it was quartered in various places along the line heretofore mentioned. Spanish barracks, warehouses, public buildings and private houses were utilized for this purpose. Most of the buildings occupied were in an extremely unsanitary condition, this being especially true of the barracks formerly occupied by Spanish troops. An immense amount of labor was performed in cleaning up these places and their vicinity and the troops were quartered as far as possible on the upper floors, where they were generally very much crowded. In some cases, however, it was necessary to occupy the ground floors, which, though paved with large flagstones, were exceedingly damp. Many of these houses were occupied by natives, left as caretakers by the owners, who were accompanied by their families, relations and friends, often aggregating a large number of persons. As rapidly as possible cots were furnished to the men, and other quarters were obtained in lieu of the most unsanitary and crowded ones, as fast as the necessary arrangements could be made. With the inaction following the occupation of Manila began a steady increase of sickness in the command. Intestinal complaints, as diarrhea and dysentery, and typhoid and malarial fevers predominated. Furunculosis, pemphigus and otitis externa furnished many cases during the month of September. Eight cases of variola and four of measles have appeared in the brigade, but there is no indication of these diseases becoming epidemic and every precaution is being taken to prevent the men from frequenting the quarters of the natives. Venereal diseases have been infrequent, there being only nine cases reported in the entire brigade on October 1; but these infections are now increasing in number, the reports showing 56 on October 22. The percentage of sick from all causes for the weeks ending October 1, 8, 15 and 22 was respectively 9.5, 10.5, 12.5 and 13. Our regiment reported 95 cases of nostalgia. Some of the regimental medical officers are badly infected with this complaint, and such naturally sympathize with the men. The result is a sick list wholly out of proportion to the real amount of disease present.

The medical service of the brigade consisted at first of 11 medical officers, 8 acting hospital-stewards and 30 privates of the hospital corps. Upon the occupation of Manila a division hospital was established and all the sick who could not be treated in quarters were removed thereto. The present strength consists of 10 medical officers, 7 acting hospital stewards and 18 privates of the hospital corps. Prior to entering the trenches first-aid packages were distributed to the officers and to every second enlisted man. The arrangements for the care of the wounded are well illustrated by the following extract from the report of Major Lewis H. Kemble, surgeon First Colorado Infantry: "The day of the building of the new trenches a temporary hospital was established in a building at the extreme left of the old insurgent intrenchments and about 100 yards to the rear of our new ones, which, though already riddled by bullets, seemed more out of range of Spanish guns in case of a possible attack than any other place. This continued to be used as the first-dressing station until the advance on Manila, August 13, with the exception that on August 1 it was found necessary to move to underneath a wide porch at the rear of the house, which was then fortified by a thick wall of earth thrown up from underneath the building. Here all first dressings were applied and the wounded were then carried back to the brigade hospital either by the litter-bearers or in native carts, on which they could be laid out full length and transported very comfortably. A first-dressing station was also established in as well protected a house as could be found on the line of the reserves, which were stationed about one fourth mile in the rear of the trenches. During the advance on Manila the first-dressing stations were moved forward as the command advanced, and the wounded were very rapidly and satisfactorily transported to the brigade hospital in native carts."

The surgeon of the Tenth Pennsylvania Infantry, Major George W. Neff, says in his report: "The medical and surgical supplies for this regiment have been very good. On August 1 twenty-eight of our men were wounded in battle and the wounds all did remarkably well. There was not a single instance in which there was an untoward symptom. This, I think, is largely due to the first-aid dressing and the careful antiseptic treatment they received at the division hospital."

Lieut. Jere. B. Clayton, asst.-surgeon, U. S. A., reports as follows concerning Camp Dewey: "The men were under shelter tents, the officers under wall tents. Diarrhea gave more trouble than any other complaint, but yielded readily to treatment. After a time in the trenches, rheumatic pains, sore feet from the continuous soaking and small infected wounds from bamboo thorns were reported to the surgeon."

Before entering Manila the ambulance service was performed by native carts and other methods improvised by the medical officer in charge of the division ambulance company. Since occupying this city the ambulance company has been a division organization and has rendered good and efficient service. The losses of the brigade from August 1 to October 15 were: Died 44, wounded 55. Of the 44 deaths, 10 were killed in action and 5 died of wounds received in action, 2 were deaths from accident and 27 from disease. Three of the 55 wounded were cases of accident.

Sanitary recommendations.—From the first organization of the command many sanitary recommendations were made by the chief surgeon of the corps, and were published to the troops. Repeated sanitary recommendations have been made from time by the regimental surgeons to their immediate commanders, and have been enforced as far as possible. The brigade surgeon has made many verbal recommendations to the brigade commander, all of which have received prompt consideration and favorable action as far as it was in his power to promote them. They are summarized in the following extract from my Sanitary Report for October 16: For the control of the existing malarial, typhoidal and intestinal disease, I would respectfully submit:

1. That no men be quartered on the ground floor without having a wooden floor raised three or four feet above the earth.
2. That double-tier bunks be furnished whenever desired by regimental commanders.
3. That the sale of native made drinks and spirits of local manufacture be absolutely prohibited throughout the city.
4. That regimental commanders be required to insist on their men drinking no water except that which has been boiled.
5. That the men be required to keep out of the poorer natives houses, and that all natives of the lower class (except servants) be excluded from the quarters of the troops.
6. That laundry work be done in quarters or in separate buildings provided for that purpose under the supervision of regimental or company commanders.
7. That earth closets be furnished when desired by regimental commanders, and that all sinks be regularly cleaned by contractors under the Quartermaster's Department.

MISCELLANY.

Gastrostomy for Carcinoma.—Mikulicz reports seventeen deaths in eighty-three gastrostomies for carcinoma; two only, from infection. The average length of life was five months; some survived over a year. Witzel's method with Hacker's sphincter produced the best results.—*Cbl. f. Chir.*, November 12.

"Progressive Medicine."—The first volume of this new quarterly, edited by Dr. H. A. Hare of Philadelphia, will appear in March, 1899.

Appointment.—Raymond Custer Turck, M.D., has been elected Professor of Anatomy and Operative Surgery in the Post-Graduate Medical School and Hospital of Chicago.

Statue of Charcot.—An imposing statue of Charcot has been erected in Paris near the entrance of the Saltpetrière and the monument to Pinel. It was recently unveiled with appropriate ceremonies.

O'Dwyer Memorial.—At the College of Physicians and Surgeons, New York, the Board of Trustees has voted to establish a scholarship to be known as "the Joseph O'Dwyer Scholarship," in recognition of the work done by Dr. O'Dwyer in respect to the intubation of the larynx and his other fruitful labors in medical fields (vide JOURNAL, xxxi, p. 1064).

The "Revue des Sciences Medicales."—Professor Hayem's large and important quarterly will not be issued after this volume, which completes its twenty-sixth year. The editor refers with just pride to the great work it has accomplished in the past, and the value of its fifty-two volumes in a library. But he frankly acknowledges that it is now supplanted in its particular field by certain standard medical journals which review the medical press of the entire world and present the freshly gathered facts each week.

Avian Tuberculosis.—Cadiot, Gilbert and Roger announce, as the results of recent experimentation, that the parrot among birds is like the rabbit among mammals, either can contract both human and avian tuberculosis, which they consider addition proof of the identity of the two affections. Still further proof is afforded by the fact that successive inoculations of pigs and turkeys ended finally in overcoming their original resistance.—*Presse Med.*, December 7.

New Publications.—From London, England, we have received the October and November numbers, these being the first two issued, of a new publication, entitled *The Medical and Surgical Review of Reviews*. This publication is edited by Nathaniel E. Boyd, M.D., published at $3.75 per annum, and will contain a monthly summary of the best news in medical and surgical periodic literature throughout the world. We notice in the two numbers already issued numerous abstracts from leading American medical journals.

Banquet to Dr. Councilman.—A social dinner was given at the Chicago Club the evening of Dec. 28, 1898, in honor of Dr. W. T. Councilman of Boston. Dr. L. Hektoen presided and spoke on "Pathology in Relation to the Past." Other speakers were: Dr. James B. Herrick, "Pathology in Relation to Medicine;" Dr. N. Senn, "Pathology in Relation to Surgery;" Dr. Councilman, "Pathology in Relation to the Future." Among those present were: Drs. M. Dodson, James Nevins Hyde, G. Fustave Fütterer, F. Henrotin, A. D. Bevan, F. S. Coolidge, J. Doering, W. L. Baum, Sanger Brown, T. W. Miller, L. E. Frankenthal, H. N. Moyer, F. Johnson, H. Hooper, F. Billings, M. L. Harris, J. H. Etheridge, L. L. McArthur, C. Fenger, H. R. Edwards, W. Andrews, W. T. Belfield, W. Van Hook, M. Herzog, A. R. Reynolds, E. C. Dudley, H. B. Favill.

Ptomain from a Hydatid Cyst of the Liver.—Boinet and Chazoulière report a case of hydatid cyst on the liver in a man of 35 years, from which a clear fluid issued after puncture, scarcely at all toxic. Two weeks later, as the fluid had collected again, the cyst was treated with electrolysis for six minutes. Punctured again after a couple of days, they obtained from the fluid a very toxic ptomain, crystallizing in long prisms and fern leaves. The electrolysis had killed all the hydatids, evidenced by the presence of numerous hooks and albuminoid substances. The patient was discharged cured. The ptomain is probably the cause of the congestion of the lungs, hiccough, collapse, observed in some cases. It indicates the necessity of puncturing again a few days after electrolysis.—*Rev. Gen. de Path. Int.*, December 5.

Infective Icterus.—Several cases have been published recently of intense infective icterus, one with nephritis, hepatitis and inflammation of the lungs, in which an encapsulated proteus was found pure in the lungs, kidney and spleen, very few in the liver and none in the blood till after death (*Settimana Med.*, October 8). Others presented symptoms of a neuritis with paralysis, one with laryngeal motor troubles, another paresis of the lower limbs, left eye and facialia. In one case the infection could be traced to excavations being made in front of the house; other inmates of the building presented other infective disturbances of greater or less intensity.—*Rev. Gen. de Path. Int.*, December 5.

Expert Testimony.—Cruppi advocates legislation in France requiring a list, to be made out each year, of competent men in the profession especially qualified for medical experts. From this list the judge selects one or more experts and the prisoner also the same number. These experts work together and discuss their opinions together. If impossible to agree on their decisions, a third expert is to be chosen by them, whose decision will be final, although under present conditions, not binding on judge or jury. In Germany the government appoints a committee consisting of men who are acknowledged to stand at the head of their respective lines, and the question is then referred to the one best qualified to decide the matter.—*Presse Med.*, December 3.

Serotherapeutics of Acute Alcoholism.—Maramaldi has been experimenting to obtain immunity with alcohol against the effect of large doses. He announces that he has succeeded in administering alcohol to dogs in progressively increasing doses until they will tolerate an amount much larger than the minimum fatal dose, without any functional or organic disturbances. The serum of the dogs thus rendered immune contains certain specific antitoxins capable of neutralizing the toxic action of a dose of alcohol larger than a quarter of the minimal fatal dose. The normal serum has no such power in any way.—*Gaz. degli Osp.*, from the *Giorn. Int. di Sci. Med.*, 1898, 17.

Cleverness of General Wood.—There is something bordering on the marvelous about General Wood. He is doing things down in Santiago that are seemingly beyond the power of mere mortals. We first had our suspicions of the General when the news came that a body of prominent merchants had called upon him and asked him to invent some new taxes for them to pay. That more than hinted at the exercise of hypnotism, witchcraft, or some other black art to which these unsophisticated islanders certainly should not be subjected by our representatives. Now we get a report that another delegation of Santiago's eminent citizens have been similarly beguiled. They went to get certain taxes reduced, and the General, within an hour, had persuaded them to consent to an increase of the burdens in question! It's a late day to talk of diabolism, but these things are more than mysterious—they contradict nature. So far, we confess, General Wood has used his magic only for commendable purposes, but can he long endure the temptations which the possession of supernatural power throws around a man?—*New York Times.*

Pasteur's Fermentation Processes Amended.—Dr. E. Buchner, professor at Tübingen, recently delivered before the Third International Congress of Applied Chemistry, an address on the subject of fermentation without yeast-cells, in which he described his method of producing fementation by means of the liquor expressed from yeast. He stated that he infers from the result of his experiments that, contrary to Pasteur's theory, living yeast-cells are not necessary for the production of alcoholic fermentation, and that, consequently, fermentation is not a physiologic process, but is caused by the sub-

stance called zymose. Professor Buchner's discovery, if substantiated, may possibly throw a new light on the theory of infectious diseases, and may lead to results of the utmost importance.—*Review of Reviews.*

Contraction of the Unstriped Muscles.—Ossipow asserts that the unstriped as well as the striped muscles are affected by the general excitation of all the motor centers producing a epileptic attack. The stomach, the intestines and bladder contract and continue this contraction for some little time after the attack has ceased.—*Rev. Gen.* from *Neurol. Cbl.*, June 15.

Traumatic Tabes.—Trummer reports three cases of tabes commencing immediately after a severe traumatism—fall from a carriage or injury from a falling tree. In one case the arm was crushed and tabes developed in the course of an attack of influenza soon after. No cause for the tabes could be discovered aside from the traumatism, in either case.—*Rev. Gen. de Path. Int.*, September 5.

Manna of the Hebrews.—H. Castrey states in *Nature*, October 8, that the Arabs crossing the deserts of Arabia and even of Africa still find and use for food for themselves and their camels, the manna celebrated in Bible history. It is a thallophyte, the *canona esculenta* or esculent lichen. It is very common and is found scattered over the sand after a rain, a grey crytogam, the size of a pea, with an agreeable, slightly sweetish taste. It has rather a laxatixe effect. It contains 14 parts nitrogenous and 29 non-nitrogenous to 5 parts mineral and 32 starchy and 4 of fatty matters to 16 parts water.—*Nouv. Remèdes*, October 24.

Insular Sclerosis.—Erben has been studying five cases in various stages of this disease. He notes the striking increase of small nerve fibers and the marked rarefaction of the large fibers. The fibers generally seem normal, but occasionally the cylinder axes are swollen and the myelin stains pink with carmin, soon losing its colorability by hematoxylin. Among the small, shining fibers others are seen, pale and straight instead of wavy. He considers it probable that these smaller pale fibers are elements of regeneration, which would explain the remissions noted in this disease, not only in the sensory disturbances but in the vesical and intestinal paralysis and diminished vision. The vascular lesions were not very decided, merely a little infiltration of the walls of the larger vessels and of the capillaries. The perivascular lymphatic sheaths were enlarged, filled with pigment and red corpuscles. Sometimes the sclerosis had extended the entire length of the artery. The disappearance of some of the cylinder axes from the commencement of the affection explains the trembling, which indicates disturbances in the contraction of isolated muscles, while the ataxia is due to alterations in the muscular synergy.—*Rev. Gen. de Path. Int.*, from *Neurol. Cbl.*, July 15.

Vaccination Against Typhus.—Vandeauwera has succeeded in preparing a vaccin out of the bodies of typhus bacilli which will confer immunity upon a rabbit or guinea-pig for days and weeks without affecting the animal injuriously in any way: 0.4 milligrams to 500 grams weight protects against an otherwise mortal typhus infection twenty-four hours later. Five or six vaccinations, or a total of 3.7 to 7.6 milligrams during fourteen days, will immunize for forty-five to fifty-nine days. The typhus vaccin retains its efficiency for months. The organic fluids of animals immunized with it possess the specific agglutinating property. Twelve milligrams of the vaccin will protect for twelve days a guinea-pig weighing 600 grams, against a fatal dose of typhus toxin. The proportion of vaccin to the weight is one to a million against typhus infection, while it is one to fifty thousand against the intoxication. He considers his experimental results so promising that he urges clinicians to try the vaccin on man, as the effectiveness of a bacterial product increases with the increasing susceptibility of the subject, and as the vaccin is entirely harmless, and can be injected subcutaneously, diluted with sterilized water or salt solution. To protect against typhus and staphylococcus infection it is necessary to use a typhus and staphylococcus vaccin. —*Deutsche Med. Woch.*, from *Journ. Med. de Bruxelles*, 1898, Nos. 27, 28 and 29.

Calcium Carbid Restricted in New York.—The Fire Department of New York City has taken measures to safeguard the handling of calcium carbid, from which acetylene gas is made. For some time past this substance has been stored in very many of the stores in the city, and as acetylene gas is generated by the contact of water with the carbid, in case of a fire the water thrown by the firemen would, if it came into contact with the substance, quickly generate gas and probably cause a disastrous explosion. While nothing of this nature has happened, the fire officials think the time has arrived when the department should take cognizance of the growing trade in the carbid. According to the new rules, all calcium carbid in transit through the city and on storage must be inclosed in hermetically sealed iron receptacles and plainly marked: "Calcium carbid. Dangerous if not kept dry." No single package must exceed one hundred pounds. As to the sale of the carbid, not more than twenty pounds, either in bulk or cartridges, can be stored or kept in any building used for dwelling or mercantile purposes, and this amount can only be kept under a municipal permit, which will provide that all quantities in excess of two pounds shall be in tight metal packages, and kept elevated at least six inches from the floor, in a fireproof safe located above the street grade. The manufacture, transportation, storage, sale or use of liquefied acetylene is absolutely prohibited within the limits of greater New York.

Thymic Asthma in Infants.—Dr. Lange, in the *Centrabl. f. Gynak.*, No. 20, speaking at Leipzig of a case of sudden death, where the thymus was found enlarged, raised a discussion on the whole subject. Kroenig was of the opinion that rapid death of an infant should always be attributed to sepsis. It is in new-born infants that the purest examples of "bacteriemia" are to be found, not a trace of disease being visible at the necropsy, even at the umbilic wound, when the blood is full of colonies of streptococci. Lange's patient died suddenly at three and a half months; it had been under treatment for ophthalmia at the eye clinic, and had been weighed every week. It was not under weight, and it died suddenly, early in the morning, without any symptoms of acute or subacute mischief in the respiratory tract. The trachea, just one inch above the bifurcation, was contracted so that its lumen, not absolutely effaced, was like the hollow in the sheath of a sword. This contraction was due to the thymus, which weighed over three-quarters of an ounce, measured one inch in thickness, and closely embraced and compressed the trachea. Structural changes were detected in the tracheal tissues. Lange claims that this case is the first recorded in which purely mechanic and persistent compression of the trachea by the thymus was sufficient to kill. He showed the parts, and with them another instructive preparation of hyperplasia of the thymus without visible compression of the trachea, from an infant who had died snddenly from after-attacks of spasm of the glottis. Zweiful had his doubts about the cause of death in Lange's first case, as the lumen of the trachea was entirely obstructed. Asthma thymicum might cause death, but there was a great difference of opinion concerning the disease.—*British Medical Journal.*

Have a Dubious Money Value.—A case of interest and importance to medical men in England was decided recently by one of the County Court Judges for Cambridgeshire. A physician sued a laborer to recover about $3.75 for professional services rendered in pursuance of an engagement to attend the laborer's wife during her confinement. Before the child was born, the wife engaged another medical man. The judge was

of the opinion that the doctor who was originally engaged had no legal claim to compensation, inasmuch as he was not called upon actually to attend the mother when she was confined. This view has provoked much adverse criticism in British medical circles; and it is not easy to defend the doctrine of the decision on any ground of good morals. It was pointed out by the plaintiff that an obstetric engagement restricts the liberty of the practitioner more than almost any other kind of case, as he is compelled by the very nature of his undertaking to be constantly in readiness to attend the patient at a time which can not be fixed definitely. To engage a doctor and thus impose upon him restrictions that may affect his movements for many days, and then employ another physician, when there has been no fault or suggestion of fault in respect to the conduct of the first one, is a course of proceeding which certainly ought to render the employer chargeable with the fair and reasonable value of the first doctor's services in holding himself ready to respond to the summons, come when it might, which should call him to the bedside of the patient. The editor of the *Lancet* makes the remark, well and truly, that this decision tends to do harm to the poor parturient patient rather than to the practitioner. The latter can protect himself by exacting deposits and in various other ways. It is especially important for the poor classes to be able to rely on the binding nature of an engagement by a medical man to attend when summoned to a confinement. Previous engagement is of the very essence of safety and comfort of a woman who knows that shortly she will be in the pain and risks of child-birth. The judge's decision tends to demoralize the whole transaction. The woman may make another engagement; the medical man when he is sent for is free not to attend. This may be a good law, but it certainly is bad morals. It is fortunate that there is between such patients and their medical men a sense of obligation deeper than any which is fostered by the law, as laid down by such an unfortunate decision. Were it otherwise, medical men, certainly the best medical men, would decline to trammel their lives with obstetric engagements, especially among the poor, and those who were compelled by circumstances to do so would have to secure themselves by substantial deposits beforehand in earnest of their fees. The judge sought to draw a comparison between the case of lawyers in the higher ranks of practice and that of medical men in the lower. The comparison can not well be made. Among the poor, lawyers are not in demand to the same extent, for no one will deny that the laborer has, as a rule, more babies than lawsuits; and from rich clients lawyers can easily command retainers which secure their position. Medicine and its aids are as indispensable to the poor as to the rich, and its practitioners should have the support of law in their modest claims for hardly earned fees. The extreme modesty of these claims does not permit of their enforcement by any prolonged litigation, so that the county courts are likely to have their way without any fear of appeals in this class of cases. But this is an excellent reason why county court judges should not disparage the great unwritten contracts which govern life and death transactions between the poor and their medical advisers.

Blood Stains.—Prince (*Phil. Med. Jour.*, Dec. 24, 1898) suggests the following mixture as giving the best results in staining the nuclei of the leucocytes clearly, and at the same time the granules of the neutrophilic, eosinophilic and basophilic cells: Saturated solution of toluidin blue (Grübler) 1 part, 2 per cent. solution of eosin (Grübler) 2 parts. He mixes the solution in distilled water in the order given, agitates thoroughly for a few minutes, as the toluidin blue is precipitated by acid anilin dyes. He then employes the supernatant fluid only. Immediately after agitation the mixture is ready for use and from thirty to sixty seconds is sufficient time for staining, although at the end of ten or twelve weeks, it requires five to seven minutes to get a good result. He fixes in dry air at a temperature of 120 degrees nearly twenty minutes, although 128 degrees will not bring disastrous results and the time of fixation may be extended several hours with a highly beneficial effect. Fixation with alcohol, or with a mixture of alcohol and ether, gives less satisfactory results, the granules not being satisfactorily separated out from their surroundings. After fixation, the film on the cover-glass is covered with the stain, the solution being allowed to remain from one to three minutes, when the slip is washed thoroughly and rapidly in running water and dried quickly in the air. After drying, it is passed two or three times through a Bunsen flame and then mounted in balsam, when it is ready to be studied with a 1-12 in. immersion lens, with a flat mirror and open diaphragm. The nuclei of the small lymphocytes are stained a rather diffuse dark blue, with darker narrow bands of wavy outline interwoven through out each nucleus, while the protoplasm is stained pale blue. The nuclei of the large lymphocytes stain deeply with the same characteristics, the protoplasm staining faintly. Granules stained intensely blue are occasionally noted in the protoplasm and the nuclei of the large lymphocytes. In the polymorphonuclear cells the nuclei stain sharply and clearly and of a dark blue. The neutrophilic granules stain pink and are isolated from the protoplasm, which remains clear. Degenerative changes in the cells are distinguished by the faintness of the reaction in such cells. In the eosinophiles, the nuclei stain greenish-blue and the granules a deep maroon. The erythrocytes react faintly or stain darkly, a brownish-red stain, according as the spreads are stained for a shorter or a longer time. Nuclei in normoblasts stain deeply, exhibiting the karyokinetic tendency, when present. This stain shows the characteristics of leukemic blood very well, with better differentiations in the myelocytes, and the plasmodium malaria stains turquoise-blue and is therefore sharply differentiated from the cell in which it is enclosed.

"Surgical Interference" or "Surgical Intervention"?—The *Richmond Jour. of Practice* (November, 1898), says, editorially: "We have never understood why authorities in surgery use the word 'interference' when speaking of operative or surgical treatment. When a surgeon performs an operation for the correction of a deformity, the mitigation of pain or the saving of life, does he mean to say that he interferes? If it be interference, then he is culpable; but certainly no operator will plead guilty to the charge of doing meddlesome surgery, and the inevitable conclusion is that the term 'surgical interference' is a misnomer. Whenever we read it in text-books, or in current literature, we feel like substituting the word *intervention* for 'interference,' using the word intervention in the sense of interposition, or, better still, mediation—a coming between for a friendly purpose. The word 'interference' suggests the idea of collision, clashing, opposition, officiousness, intermeddling, etc. According to Webster: 'A man may often *interpose* with propriety in the concern of others; he can never *intermeddle* without being impertinent or officious; nor can he *interfere* without being liable to the same charge, unless he has rights which are interfered with.' And quoting from Trench: 'In our practical use, *interference* is something offensive. It is the pushing in of himself between two parties on the part of a third who was not asked, and is not thanked for his pains, and who, as the feeling of the word implies, had no business there; while interposition is employed to express the friendly, peacemaking mediation of one whom the act well became, and who, even if he was not specially invited thereunto, is still thanked for what he has done.' A few days ago we suggested this improved phraseology to two of our surgical friends, both of whom are teachers of surgery and liberal contributors to surgical literature. They agreed with us that the point was well taken, and announced it as their intention to adopt the suggestion, and we shall hope to see its general adoption by surgical writers."

Recovery After Wound of the Heart.—According to the *Lancet* (Sept. 18, 1898), Dr. Parlavecchio has described a case of punctured wound of the heart on which he had operated successfully. On the night of July 7 a man, 20 years of age, was stabbed in the fifth intercostal space on the left side, in the parasternal line (the vertical line midway between the border of the sternum and the nipple), with a knife. He afterward walked a distance of more than 200 meters (218 yards) to the Hospital of San Giacomo. Five hours later he was found to be suffering from pneumothorax on the left side with extensive effusion of blood into the pleura. The area of cardiac dulness was increased; at the apex the heart sounds were confused, and at the base they seemed to be distant. The pulse was irregular, intermittent and small. Parlavecchio suspected a wound of the heart, or at least a wound of the pericardium, but was not able to operate until eight hours after the injury. Chloroform having been given, a free incision was made in the fifth intercostal space and much blood escaped on opening the pleura. After resection of the fifth rib, a wound admitting two fingers was discovered in the pericardium and was enlarged so as to expose the heart, in which there was near the apex a V-shaped wound, 3.5 centimeters (one and one-half inches) long, penetrating obliquely into the left ventricle and intermittently discharging blood. It was closed with four deeply-applied separate silk sutures, after which there was no further hemorrhage. The pericardium and the intercostal wound were then sutured, the whole operation lasting forty minutes. The V-shape of the wound in the heart was probably due to its movement during the infliction of the wound. The patient's survival for the eight hours preceding the operation may be explained by occlusion of the wound by clot, which was displaced during the struggling occasioned by the chloroform. The subsequent history of the case was quite uneventful, and on August 14 the patient insisted on leaving the hospital. It is added that this is the third case in which suture of a wound of the heart has been followed by recovery.

Craig Colony for Epileptics.—New buildings are to be erected at the Craig Colony for the epileptics of New York State, which will provide accommodations for 300 additional inmates, under the per capita cost of about $350. The experience of this charity in the last three years has tended to remove the apprehensions of those who opposed the segregation of these patients, all of one class, in an institution by themselves. Not only has the influence of the patients on each other not been depressing, but the opposite has been found to be the fact. A sympathetic and helpful influence has arisen among them in that they are taught constantly to care for one another. They are trained to go in pairs or groups, and to be made to help a fellow-sufferer during an epileptic seizure. Regarding the practicability of making such a colony self-sustaining, some light has been gained. It is, or rather will be, found that all this is true, but at the same time this assertion should have been qualified by the statement that it would take time to do it, for the reason that none of the patients admitted, so far, possessed any degree of skill or education that would make them of much use in the industrial life of the colony. They had no opportunity in private life to acquire such skill, and when we furthermore remember that the Colony was obliged, in its early days, to receive patients exclusively from county poorhouses and alms-houses, it will be further appreciated without explanation why such patients could not and would not work. It takes three years to train the average epileptic, of an average degree of intelligence, to perform labor that is really useful and that helps to reduce the cost of maintenance. The nature of his disease makes it difficult to teach him, for the reason that he can not at any time act in continuity. What he does or learns today may be undone or forgotten during the next two or three days by reason of his incapacity from a seizure or series of seizures. The State Commission in Lunacy has approved of the contract by the board of managers of the Manhattan State Hospital, for the erection of the new Colony group at Central Islip, Long Island, to accommodate 2250 patients. It is designed to have this group finished by 1901, when the Blackwell's and Hart's Island institutions must, under the terms of the transfer of the New York City institutions to the State, revert to the city authorities. The population of these islands is now 2000. The cost of maintaining the insane in the institutions of New York is lower this year than at any time since the inauguration of the State care in 1893, being $184 per capita per annum.—Spratling: *Charities' Review*, November 6 (vide JOURNAL, xxxi, p. 1001).

Gleanings.—Laborde exhibited a guinea-pig at the meeting of the Paris Acad. de Méd., November 29, with confirmed experimental epilepsy, whose entire cervical sympathetic had been excised with the three ganglia, without affecting the epilepsy in the slightest. Collective report on results of serotherapy of diphtheria in Russia shows that the public received it with confidence from the first, and that the death-rate has fallen to less than one-half of what it was before its introduction (*Gaz. Méd. de Paris*, December 2). . . . Intestinal perforation and fistula after nephrectomy, with erysipelatous complications; spontaneous recovery commencing the fifth day with the natural course of the feces reestablished (Depage, *Gazz. d. Osp.*, December 6). . . . Formation of multiple anastomoses between a few branches of the veins of the retina, observed by Elschnig in two cases. . . . Soft chancre of the conjunctiva, fourth on record, cured with insufflations of calomel in fifteen to twenty days. No bacteriologic proof (*Rev. Gen. d'Ophthal.*, November 30). . . . Turner recommends cabinet-maker's glue and lignin, heated and rubbed into cambric over a cast, for a light, simple, porous and inexpensive prothetic apparatus (*Cbl. f. Chir.*, November 5). . . . Palleroni recently resected a large part of the liver to remove an echinococcus cyst. Seventeen stitches were taken, the process much facilitated by a few temporary threads passed through the liver, by which the assistant raised and held the organ (*Gazz. d. Osp.*, No. 34). . . . Virulent proteus found in meat from a cow that had been slaughtered on account of traumatic pericarditis. The meat produced sickness in sixty-three persons. A proteus was also noted in the Strasburg epidemic of the same nature (*Presse Med.*, December 7). . . . Tuffier calls attention to "tuberculous periappendicitis" without tuberculous lesions in the appendix itself. Three cases (*Presse Med.*, December 3). . . . Typhus bacilli noted in the marrow of a rib and of the femur in a case reported by Busch (*Zft. f. Hyg. u. Inf.* xxxiii, 3). . . . Case of progressive paralysis in mother and child of nine; mother died in three years, child in seven (*Deutsche Med. Woch.*, December 1). . . . Ballard, extolling the value of cheese as food, at the Paris Acad. of Sciences, stated that 100 grams Gruyère cheese contain as much fatty and nitrogenous substances as a quart of milk, that is, more than 250 grams of meat (*Presse Med.* December 7). . . . A boarding house has just been opened at St. Petersburg for the exclusive benefit of country physicians who wish to spend a few weeks there attending some post-graduate course, at the minimum of expense. It is practically a club house in most of its arrangements. . . . Simon confirms the much increased peristalsis of the stomach and intestines after taking one gram of Glauber's salt during the day. It has a beneficial effect on anacid, mucous gastric catarrh, but does not decrease hyperacidity. . . . Escherich notes that the amount of water in an organ determines the depth of the shadow in the radiograph, as can be verified with a wet and dry sponge. . . . Case of cirrhosis of the liver, with spleen weighing 2.75 kg. and hemorrhagic diathesis, in a man of 39 years. The liver affection was not suspected until just before death, and the case assumed to be pseudoleukemia. . . . Fifty unmistakable cases of tardy congenital syphilis noted in the Hamburg asylums,

among 540 idiots, 100 deaf and dumb and 60 blind subjects (*Deutsche Med. Woch.*, December 1). Lindner exhibited a patient of 66 years, before the Berlin Surgical Society, whom he had operated nine months previously for an incarcerated crural hernia. An injury to the arteria femoralis made it necessary to suture quite a large hole in the artery; smooth recovery. Glück also reported extensive successful experimentation with sutures in arteries and veins, with and without absorbable or non-absorbable prothesis (*Deutsche Med. Woch.*, December 8).

San Francisco.

New Quarters.—The College of Pharmacy of the University of the State of California recently moved to its new quarters at the Affiliated Colleges buildings. The Market Street Railway Company is building a road out to the buildings, to be completed early this year. The old road ran out within about one thousand feet of the buildings, but it left passengers at the bottom of a steep hill. The new road will be of much better construction, is being built on the street level of the buildings on College Hill, and it is the purpose of the company to run cars through from down town to the buildings. Changes in the course of the other departments of the university at Berkeley have been made, so that the undergraduates who are at the same time prospective medical students, may take up much of the required preliminary work while at Berkeley. After a two-year course with the departments at Berkeley, students may enter the second-year class at the medical department and receive upon graduation the degree of B.S., as well as the regular medical degree. The library of the medical department has already outgrown the shelving provided when the room was furnished, and as accessions to the library are numerous and continuous, increased facilities are being planned for the care and shelving of the volumes.

Assistant Appointed.—At his personal request an assistant has been appointed to Dr. R. A. McLean, in the chair of clinical surgery, in the medical department of the University of California. Dr. McLean has been in very bad health for some time past, and has found the work entailed upon him by virtue of the college work, too trying for his health. Dr. T. W. Huntington of Sacramento has been appointed as Dr. McLean's assistant, and it is understood that he will take charge of all the operative work. Dr. Huntington graduated from the Harvard Medical College in 1876, and for many years has been the chief surgeon of the Southern Pacific Railway's hospital at Sacramento. By long, careful and successful work he has made for himself a very enviable reputation on the Pacific coast as a surgeon of the first ability, and it is an honor won by hard and meritorious work that has now come to him in this appointment.

Washington.

Public Health Committee.—At the meeting of board of directors of the Washington Board of Trade, held on Dec. 16, 1898, the following were appointed members of the Committee on Public Health: Drs. W. W. Johnston, chairman; H. L. E. Johnson, W. P. C. Hazen, Louis W. Ritchie, John E. Jones, J. B. G. Custis, George Henderson, Charles W. Richardson, R. A. Phillips and H. H. Barker.

Antivivisection Bill.—At the close of the session of the American Humane Association, the organization adopted a resolution earnestly indorsing the Washington Humane Society's bill for the regulation of vivisection in the District of Columbia, and advising the humane societies of the country to work for the bill before Congress. Resolutions were adopted fixing the salary of the secretary of the Humane Association at $500 a year. It was further proposed to nominate Columbus, Ohio, as the next place of meeting. John G. Shortall of Chicago was elected president. It will be next to impossible for Congress to consider this bill during the present session, but the regular physicians of the country should, nevertheless, keep an eye on this matter and be prepared to resist the unexpected, which may crop up at any moment.

Medical Journal Club.—At the annual meeting of the Medical Journal Club of Washington, Dr. Henry Alfred Robbins was elected president and Dr. Francis P. Morgan secretary and treasurer. Dr. D. W. Prentiss was elected an active member of the club.

Health of the District.—The report of Health Officer Woodward for the week ended December 17 shows the total number of deaths to have been 118, of which 71 were white and 46 colored. The principal causes of death were apoplexy, heart and lung diseases, intestinal diphtheria, diseases of the kidneys, scarlet fever, typhoid fever and suicide. The total number of births was 112, of which 78 were white and 44 colored. At the close of the week there were 127 cases of scarlet fever and 122 cases of diphthcria under treatment.

Philadelphia.

"Old School Physicians" vs. "The New."—The above heading is clipped from a daily paper published in this city, in which it is reported that disciples of Hahnemann are up in arms over the way graduates of that institution, and others which teach the same doctrine, have been excluded from serving as surgeons in the National Guard of Pennsylvania and in the regular Army and Navy. The homeopaths of Philadelphia want to assert themselves, and they have asserted themselves with a vengeance. They want to grow and expand. Whether this expansion also includes a breaking away—an enlargement as it were— upon the views once promulgated by their founder, remains to be seen. The writer is in a position to know that at an institution at which they operate they use bichlorid solution in different strengths, varying from 1000 to 5000, that they disinfect in the same manner as allopathic physicians, and operate similarly, so that if you did not know they were homeopaths, you would hardly suspect it. It may also be stated that the doctrine of minute doses, or doses given according to "potency," is not so strong as it once used to be. This time and day may, therefore, be a fitting one in which to expand—enlarge, but whether or not they will be requested to testify to that fact before admission into the Army and Navy, remains to be seen. It may be a question for Surgeons-General Sternberg and Van Reypen to decide. In regard to the question of admission of homeopaths into the National Guard of Pennsylvania, a prominent homeopathic physician is reported as saying: "A strong combination exists in the National Guard of Pennsylvania to prevent the appointment of homeopathic surgeons. The fact that such a combination exists is not a secret. When the war broke out, many homeopathic doctors offered their services in the volunteer army. They were invariably rejected, however. In most instances no reason was given for their rejection. The surgeons-general in most of the States, including Pennsylvania, are old school men; they have everything in their own hands, and whenever a homeopathic applicant presents himself for appointment, these officials take good care to see that they are rejected. This state of affairs is due to 'prejudice' alone. The same condition exists in the Army and Navy. Time and again have homeopaths presented themselves before both the Army and Navy Boards for examination, only to be turned down. The Surgeon-General of the Navy does not conceal his prejudice against the followers of Hahnemann. In the Army the things are the same."

Good Showing.—During the recent Hispano-American war and subsequently, the University of Pennsylvania Hospital treated a total of 270 soldier patients, only six of whom now remain. Of the total number, probably the majority suffered from typhoid or malarial fever. There were only five deaths.

National Relief Commission.—Mr. George C. Thomas, treasurer of the National Relief Commission, has acknowledged the following contributions: Cash previously acknowledged, $79,293; cash from benefit play, $102.40; cash, $222.37; total

value of supplies to date, $40,345; grand total cash and supplies, $119,962.77.

RESIGNATION.—Dr. Guitéras has severed his connection with the University and will make his future home on his native soil. He is known far and wide for the earnest devotion and zeal with which he has always imparted the subject of pathology to students of this school.

DIPHTHERIA.—The fact that diphtheria has been almost epidemic in this city for the past few weeks is gradually being learned. From a study of the mortality statistics during that time it is seen that there has been a steady increase in the number of cases reported from week to week, with a corresponding death-rate.

WANT A STATE INSANE ASYLUM.—Some time ago, at a meeting of homeopaths, it was decided to attempt to have the State erect an asylum for the treatment of insane persons under their direct supervision. At the last meeting of the Homeopathic Medical Society of Germantown a report was heard from the organization's Committee on State Homeopathy for the Insane, which accepted the plan proposed. It was therefore suggested that the society appoint a delegate to be one of a committee composed of a delegate from each of the other homeopathic societies in the State appointed to act in conjunction with the legislative committee of the State Homeopathic Medical Society to secure the passage by the next Legislature of a bill providing for a Homeopathic State Insane Asylum in Pennsylvania. It is further stated that at the last session of the Legislature a similar bill was passed, but owing to the fact that no definite place was settled for the erection of the asylum and for other reasons, the bill was not signed by the Governor.

LA GRIPPE.—Two weeks ago there were probably not two dozen cases of la grippe in this city, but today the number would almost run up to a hundred thousand. City officials, ministers, doctors, policemen are down with the disease, while several schools have been closed until its abatement.

MORTALITY REPORT—According to the last report of the Bureau of Health an increase in the total number of deaths is shown over the previous week, there being 650 deaths, which is an increase of 169 over that of last week and an increase of 254 over the corresponding period of last year. Of the total number of deaths, 164 occurred in children under the age of five years.

SMALLPOX—The secretary of the State Board of Health, Dr. Benjamin Lee, recently reported the status of the smallpox epidemic in this State as follows: "Since my last report of Dec. 12, 1898, smallpox has been reported in Pennsylvania as follows: Borough of Bedford, Bedford County, 9 cases, no deaths; Hustontown, near McConnellsburg, Fulton County, 1 case. The disease is even reported near Robertsdale, Huntingdon County, and Enid Wells township, Fulton County. As these places are contiguous this is probably one and the same outbreak. A State Board of Health medical inspector is making a thorough investigation of all these counties."

ANNEX TO SAMARITAN HOSPITAL.—Several months ago the Samaritan Hospital purchased a large fourteen-room dwelling-house adjoining their property and for the past few weeks workmen have been employed in uniting the two buildings. The enlarged hospital now has a frontage of 100 feet on Broad Street and 160 feet on Ontario Street. As the hospital is now arranged a convenient plan may be adopted of abolishing the old method of carrying patients on stretchers through the yard from the Broad Street entrance. The new annex is well lighted and ventilated and furnished with all the latest requirements. The total cost of the addition was $16,000.

TYPHUS FEVER.—This week a patient suffering with typhus fever found its way to the Pennsylvania Hospital, which was promptly recognized and transferred to the Municipal Hospital. Owing to the danger from contagion the patient was finally isolated in an abandoned church building adjoining the Municipal Hospital which was purchased by members of the Board of Health. Director Riter was charged with exceeding his authority in acquiring outside property by the Board, but matters were soon smoothed over by memorializing councils to make an appropriation for the erection of buildings for the treatment of similar diseases.

SMALLPOX WARD FOR MUNICIPAL HOSPITAL.—Dr. George Woodward, who owns the property adjoining that of the Municipal Hospital, which has formerly been used for church purposes, has given notice to the mayor that it is his purpose to deed the property to the city for the use of the Municipal Hospital. It is now thought that this building will be converted into a ward for the treatment of patients suffering from smallpox.

SALARY RAISED.—Council's Committee on Finance met this week and, among other items of the budget of city expenses, took up the subject of compensation for the prison physician, now Dr. Butcher. For many years the salary has been $1200, though frequent attempts have been made to raise it, without success. At one time the Committee favored a raise of $300, but it was defeated in councils. Subsequently the inspectors raised it to $1800, but the sub-committee finally fixed it at $1500, the sum compromised upon and now accepted by the prison physician.

ARMY CAMPS IN THE SOUTH.—Mr. M. S. French of the National Relief Commission, who has been for the past week on an inspecting tour to the different army camps in Georgia and elsewhere, has returned, and speaks in high praise of the different camps and hospitals which he visited. The hospital located at Augusta he considers a model of its kind, with good water and excellent sanitation facilities. The bospital at Savannah is also well equipped. Dr. Groff, who has taken charge of the work in Porto Rico, has mailed a report to the commission.

BEQUEST TO MASONIC HOME.—The will of James L. Bugh has been admitted to probate in the sum of $200,000 or over. Mr. Bugh was a prominent mason of this city and died at his home Dec. 11, 1898. The greater part of the estate is left to the Home for Free and Accepted Masons of Pennsylvania, located at 3333 North Broad St.

CHANGE OF ADDRESS.

Bannister, J. M., from Fort Leavenworth, Kan., to West Point, N. Y.
Benepe, J. F., from Lemcke Bldg. to Willoughby Bldg., Indianapolis, Ind.
Crump, J. M., from South Prairie to Fairfax, Wash.
Concanon, J. J., from 241 to 26 W. 34th St., New York City.
Fish, E. F., from 211 Grand Ave., to 633 27th St., Milwaukee, Wis.
Jones, W. D., from Rising City, Neb., to Devil's Lake, N. D.
Kenefick, T. A., from Newport, R. I., to 50 E. 31st St., New York City.
Lewis, G. F., from Oakalla to Carbon, Ind.
Litvin, A., from 568 to 291 W. 14th St., Chicago.
Misick, O. S., from 322 Belmont to 445 E. North Ave., Chicago.
Straley, S. B., from Huntsville, N. J., to Cocoa, Fla.
Stevens, F. W., from Seattle to 780 Sawyer Ave., Chicago.
Sprague, W. B., from Eureka Springs, Ark., to 801 Rockwell Street, Chicago.
Venn, F., from 5033 to 5117 Ashland Ave., Chicago.
Vedeler C., from 715 W. Harrison St. to 649 W. Adams St., Chicago.

LETTERS RECEIVED.

Ammonol Chem. Co., New York City.
Bischoff & Co., C., New York City; Balke & Co., R. F., (2) Louisville, Ky.; Burnett, A., Sullivan, Ark.; Book Shop Bindery, Chicago, Ill.; Benton, E. A., Central City, Neb.; Bean, W. W., Rolfe, Ia.; Bush, J. Foster, Boston, Mass.
Crawford, G. M., Lorain, Ohio.; Cooling, A. N., Wilton Junction, Ia.; Codman & Shurtleff, Boston, Mass.
Durham, C. E., Galveston, Texas; Dunn, S. C., Columbus, Ohio; Dewey, Richard, Wauwatosa, Wis.
Elkhart Carriage & Harness Mfg. Co., Elkhart, Ind.; Electric Light Bath Co., Ltd., Battle Creek, Mich.
Fougera & Co., E., New York City; Frazier & Co., W. S., Aurora, Ill.
Goshen Pharmacal Co., Goshen, Ind.
Hawley, D. C., Burlington, Vt.; Henry Pharmacal Co., Louisville, Ky.
Instant Cut Off Co., Port Huron, Mich.
Jackson, C. O., Pittsburg, Pa.; Jens, F. B., St. Louis, Mo.
Kimball, C. P. & Co., Chicago, Ill.; Keller Pharmacal Co., Baltimore, Md.; Kidd, J. W., Joliet, Ill.; Kirkland, C. B., Detroit, Mich.; Koechl & Co., Victor, New York City; Keyes, T. B., Chicago.
Lea Bros. & Co., Philadelphia, Pa.; Le Fevre, E., New York City; Lockard, W. S., New Castle, Colo.; Lucas, Geo. N., Malta, Ill.
Morse Advertising Agency, L. D., New York City; Morgan, J. Howard, Westerly, R. I.; Martin, L. M., Raymond, Wis.; Morrison, W. T., Bay Port, Mich.; Miller Rubber Mfg. Co. (2), Akron, Ohio; Mahin Adv. Agency, Chicago; Maxey, M., Mt. Vernon, Ill.; McCassy, J. H., Dayton, Ohio; McIntosh Battery and Optical Co., Chicago; McKee & Urmy, New York City.
Niles, Charles V., Calumet, Mich.; Norwich Pharmacal Co., Norwich, N. Y.; Nutrolactus Co., New York City.
Overall, G. W., St. Louis, Mo.
Pantagraph Printing and Stationery Co., Bloomington, Ill.; Powell, E. W., Omaha, Neb.; Peavy, J. F., Asheville, N. C.; Pressey, A. J., Cleveland, Ohio; Petermeyer, W., Odebolt, Iowa.
Rohrabaugh, E. E., Watseka, Ill.; Ridlon, John, Chicago.
Sapp, C. E., Gambier, Ohio; Sanitarium, The, (2), Battle Creek, Mich.; Sanders, W. B., Philadelphia, Pa.; Schering & Glatz, New York City; Stover, E., Rawlins, Wyo.
Taylor, P. R., Louisville, Ky.; Tyree, J. S., Washington, D. C.; Tyson, James, Philadelphia, Pa.
United States and Canada Mercantile Agency, Chicago.
Varner, W. T. Evansville, Ind.
Wardner, H., La Porte, Ind.; Wessinger, J. A., Ann Arbor, Mich.; White, Frank T., Co., Chicago; Widmer, W. A., Philadelphia, Pa.; Wilder, B. G., New York City; Winn, J. F., Richmond, Va.; Woldert, E. A., Philadelphia, Pa.; Wyckoff, R. M., Brooklyn, N. Y.